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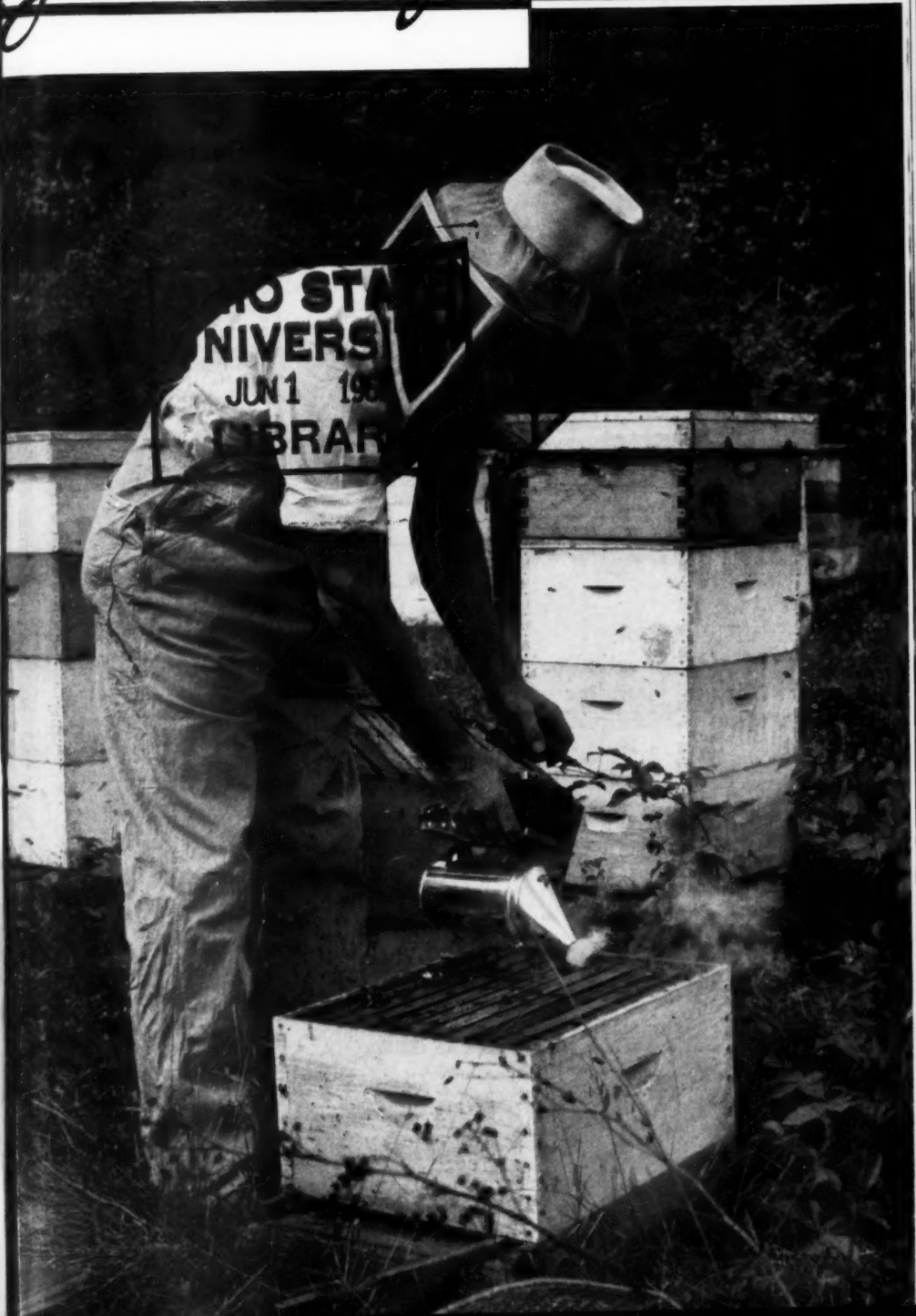

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Gleanings in Bee Culture

June, 1960 CONTENTS Vol. 88, No. 6

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COVER PICTURE — Have you ever thought about what a job it is to lift off filled and partly filled supers of honey during a honey flow in order to inspect the brood chambers below? This is back-breaking work that has to be done and falls to the lot of our bee inspectors. We should appreciate, perhaps more than we do, the invaluable service bee inspectors perform for our industry.

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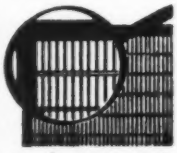

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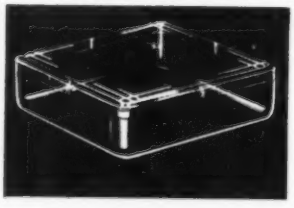

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Monthly HONEY Report

WALTER BARTH
Field Editor
San Antonio, Texas

A RECENT STUDY by the U. S. Department of Agriculture suggests that during the next 15 to 20 years per capita purchases of food may increase as much as 15 percent. Per capita requirements of processed foods for home consumption are likely to be half again as much as those for unprocessed foods. Here is a big opportunity for increased honey sales. The American Honey Institute stands ready to promote honey if the necessary funds are made available. Such a bright USDA prediction deserves a good response from all of us . . . . our contribution to the Institute and our membership in the Federation. Help yourself and send in your share today to insure your bigger share in the growing honey market of tomorrow.

Honegar

Last month we reported that the Food and Drug Administration had declared war on honey and vinegar, at least when combined into Honegar. At Albany, New York, FDA seized 5,000 cases of the concoction, which is marketed by B. T. Babbitt, Inc., maker of Bab-O cleanser.

FDA admits it had to scrounge for a legal reason for the seizure. The charge: misbranding. The product, says FDA, does not bear "adequate directions for use". It concedes that the label on the bottle is harmless enough; the label merely recommends Honegar for "greater zest in drinks, basting, marinating" and the like.

The real catch is that the product, which Babbitt acquired recently, was "inspired" by the book, FOLK MEDICINE by Dr. D. C. Jarvis. Dr. Jarvis has no known connection with Babbitt, but the book points out that honey with vinegar (it does not mention Honegar, Babbitt says) has been used as a remedy for arthritis, belching, obesity, heart attacks, sterility, and mental retardation.

Honegar bottles have carried tags promoting the book, and some retailers have featured the book with their Honegar displays. Babitt says, though, that the tag made no claims for the therapeutic value of Honegar.

President Marshall S. Lachner says Babbitt's Honegar Division was "dumfounded" by the FDA action. "We believe any housewife concerned with her family, and indeed any doctor, will agree that these two nutrients—honey and vinegar—have only beneficial properties," he says.

Babbitt has removed the offending tags, although it insists that such tie-ins are legal. We hope this will end the bad publicity as the writings of Dr. Jarvis have done so much good for honey sales throughout the country.

Fiesta Publicity

Without wanting to blow our own horn. I can't pass over the activities of the beekeepers of Llano and Burnet counties here in Texas. They sponsored a large float publicizing honey and

(Continued on page 381)

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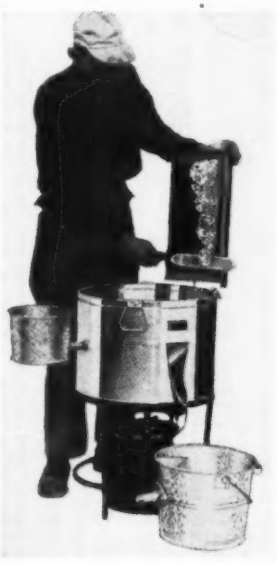

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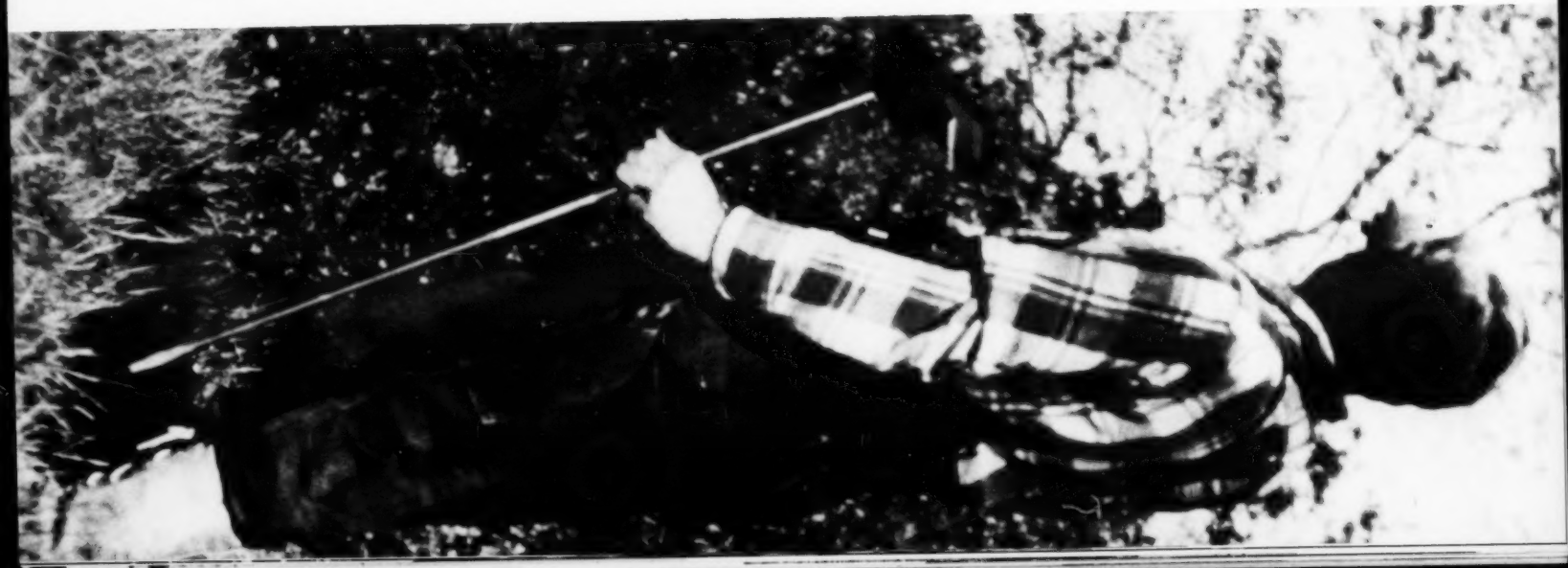
BEE TREE-ZY

Years ago hunting bee trees was a way of making a livelihood, but today it has become a very interesting pastime and hobby.



EUGENE KEYARTS
Madison, Conn.

THERE IS NO DOUBT that nearly every one interested in bees has heard or read something about bee hunting. There also is no doubt that some people will ask; "Bee hunting? What's that all about?" and, "Why would anyone want to hunt a bee?"

Long before man-made sugars were available or plentiful most folk were entirely dependent on the product of the honeybee for all their sweetening.

A person who was capable of locating trees in which honeybees live and store their rich harvest, was an important personage. In many instances he supplied his family, neighbors, and friends with the only sweets most of them ever tasted. For this service the bee hunter was usually well repaid. Today bee hunting has no commercial value. It is strictly a sport, a hobby.

The equipment required to go bee hunting is simple and inexpensive. All one needs is a small box and a bottle of sugar syrup.

Beekeepers have the reputation of being individualists, and one would rightly suspect that bee hunters have individualistic traits also. There are as many types of bee-boxes as there are bee hunters. On this hunt we will use the bee-box I designed and have used for many years.

The Bee-Box

It is a small box about three inches square. The box has a glass cover, and is divided into two sections by a metal slide. The sections are one above the other. The lower section contains a piece of honeycomb. This is the bait compartment. The section above the metal slide is the capturing and carrying compartment.

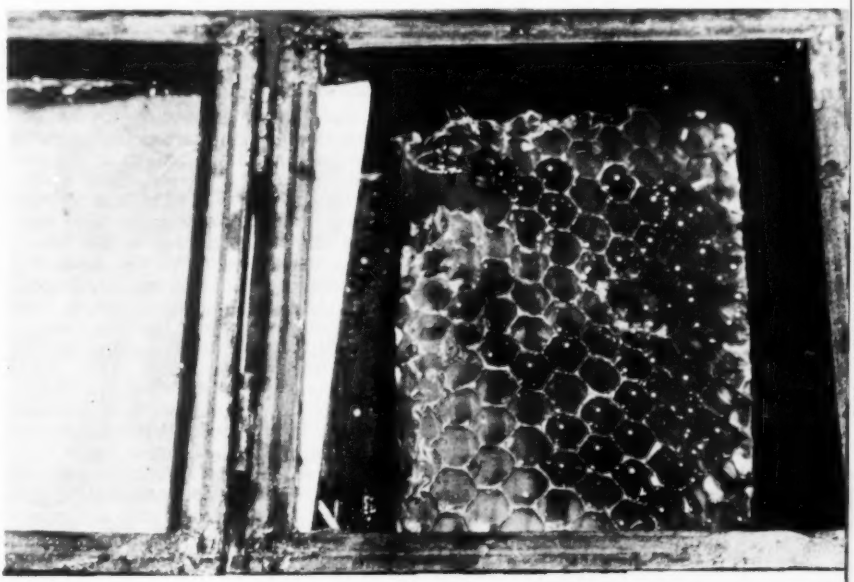
The comb in the bait compartment is filled with sugar syrup. The metal slide is then closed over the bait. Taking the box in one hand with glass cover open and metal slide closed, we cautiously stalk a bee working on a nearby blossom. The box is carefully worked beneath the bee and blossom, the cover open above them. With a quick snap the cover is closed, capturing the bee inside the box. The blossom stem is broken at the edge of the

box and the box placed on an upright support.

The captured bee is frantically trying to escape through the glass toward the light. The metal slide is withdrawn and placed over the glass, blocking out the light. The bee ceases its frantic effort to escape. She senses the nectar beneath her and settles down on the comb. She inserts her mop-like tongue into one of the cells and begins to suck a load of the syrup into her honey sac.

Through her compound eyes the bee is observing every detail of all that lies around this strange blossom. She intends to return to this supply of nectar and she must be able to find it though it be hidden by dense foliage in deep woods and perhaps miles from her hive. It is for the sole purpose of finding this spot again that our bee makes this flight above the box.

The bee hunter, if he has been quick and alert enought to follow the bee in



It takes her about 30 seconds to fill her honey sac. Then she preens and prepares herself for the homeward flight. Taking wing she comes out of the box but does not leave immediately. Hovering just a few inches above the box she circles a few inches in diameter, then spirals upward. Each circle increases in diameter until the bee is flying about 30 feet above the ground in a circle about 50 feet across. Suddenly she beelines for home.

Watching the Baited Bee Take Off

The bee hunter, the better to observe this swift circling spiraling flight seats himself upon the ground with his back to the sun, and tries to follow the bee's swift circling flight.

her maneuvering, notes the direction she has taken and selects a landmark in the distance along her line of flight. He now knows the general direction in which the bee's colony lies.

The landmark having been selected the bee hunter settles down to wait the baited bee's return. The bee-box is left invitingly open for her return. It may take 10 to 20 minutes for her to take the cargo to the hive, seek a suitable cell, deposit her load, then return to the bee-box.

The first indication of the bee's return is her busy hum as she flies by. Then the hunter catches sight of her as she hesitates above the open bait. She does not drop down to the comb

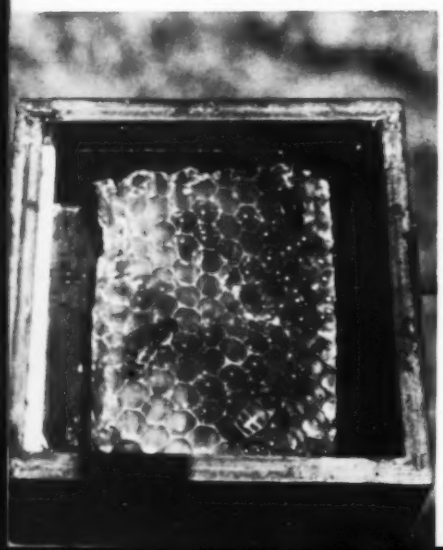
immediately, but soon overcomes her suspicion and straddles the comb to take on another load of nectar.

Once again having filled her honey sac, she preens and prepares herself for flight. As before she comes out of the box circling. Again the bee hunter watches her until the moment she breaks the last circle and heads for home. As before, the bee hunter checks her line of flight in relation to the landmark.

Normally a foraging bee gathering nectar may visit as many as a thousand blossoms to secure enough nectar to fill her honey sac.

Telling Her Sisters about the Find

When conditions are not normal, such as our bee-box with its excess supply of nectar, then the foraging bee reacts differently to the situation. Realizing that here is more than she can cope with alone, she seeks help. Returning to her colony with a load she first communicates with her sisters. Since bees cannot talk or hear they communicate in other ways. First she gives a few of her sister foragers a sample of the nectar she is carrying. This is done tongue to tongue. After samples have been given she prepares to tell how far and in which direction they must fly to reach this supply of nectar. The information is given in a special dance the movements of which inform the interested watchers how to locate this rich find.



After dancing and performing her duty as town crier, she deposits her load of nectar into a suitable cell. While she is so occupied the bees who have received the news leave the hive for the bee-box containing the syrup. So explicit have been the instructions that they need no other guiding. They invariably find the supply.

The bee hunter, back at the bee-box site, patiently waits the return of the bee or bees. The first satisfying thrill of a bee hunt is when the first bee released returns to take on a second load. The second thrill occurs when several bees come to the box and add to the performance of the first one. The bee hunt is then really under way.

Each new bee coming to the box goes through the same performance as the first one. Each returns to the hive and informs new recruits. Soon several hundred bees will be coming and going. It is not necessary to have more than six or seven bees in the box at the moment we make the next step. Checking the box we see a half-dozen bees in it; the hunter captures them by closing the cover. He drums on the side of the box with finger tips, driving the bees from the comb. They try to escape toward the light but are blocked by the glass. The metal slide is closed, preventing the bees from going down into the bait compartment again. Our captured bees, now safe in the carrying compartment, are transported in this manner across hill and dale to the area near the landmark we selected.

Watch for Line of Flight

Arriving at the landmark the bee-box is set up and the bees released. The bee hunter watches, as the bees take off circling and spiraling upward, and again tries to catch sight of them as they break and beeline for home. If he has been quick enough he notes the direction taken and lines up a new landmark. When these bees return he captures a number of them in the box and quickly moves along to the second landmark.

It may be necessary to set up and release bees time and time again, following them so long as they lead.

Eventually, the bees circle as before, but fly back along the line followed. The bee-tree has been passed. It is somewhere between this point and the

previous set up. Now the bee hunter takes some captured bees and releases them from a point at a right angle to and some distance from the original line, to give a line which will intersect the original line. There are now three lines which the bees have shown. At the point where these three lines converge the bee-tree should be found.

Trees with cavities, dead limbs, and hollows, are potential bee-trees. All the trees in the area are carefully inspected. The search may take hours, however, the successful bee hunter must carry on and not give up.

Bee Tree is Found

All trees are double checked by standing close to the trunk, looking up and moving completely around it. Every inch of the trunk and each branch is carefully scanned to best catch a glimpse of the bees against the light as they come to or leave the colony. Finally they are seen flying into a knothole. This is the most thrilling moment of any bee hunt.

When hunting bees today one may expect to end up in someone's apiary, or in a building. Most tree hunters are more than satisfied just to be able to follow the bees to their colony no matter where the search ends. Even though the hunter finds a tree it is seldom his: it usually belongs to someone else. Before the bee hunter can cut a tree he must obtain permission from the owner. When an owner grants permission to take up a bee-tree it is usually with the understanding that he receive half of the treasure which should not be taken until late fall, after the bees have completed their harvest.

To cut the tree, the hunter should be equipped with axe, saw, smoker, bee veil, containers to hold honey and comb, and a suitable box for the bees.

The tree is felled. The cavity is sounded and a saw cut made half-way through the trunk at each end of the cavity. The axe pries and hacks between the saw cuts until that section of the trunk swings away from the body of the tree, like the lid of a treasure chest. It is now that the bee hunter has the second big thrill of bee hunting, —when the treasure of bees, comb, and liquid gold is exposed to view.

The comb is carefully cut away from the walls of the cavity. The bees are brushed from the comb into a box. The combs and honey are placed in containers and covered to prevent the bees from re-clustering on them. Then gathering our gear and treasures we wend our weary way home from a successful bee hunt.

XUM

Blue Ribbons For Diana

ANN MICHELE HAPP
Medina, Ohio

PETITE LITTLE GIRLS with soft red curls are sure to win blue ribbons!

Sometimes they win them by baking a cake, sewing a dress, or by entering a beauty contest. . . and sometimes, they even win them by preparing a large, technical project on beekeeping for a science fair!

For example, tiny copper-haired Diana Paine of Middletown, Ohio has won three blue ribbons so far, by exhibiting her beekeeping project.

Diana's project first won top prize at her Junior High School Fair. Then she entered it in a five county science exhibit and won another blue ribbon. And, once more, in May, her beekeeping exhibit took first prize at the District Science Fair.

It is plain to see why Diana's exhibit is always a winner because it is

Diana Paine and her exhibit.

very complete. It consists of everything from the necessary equipment it takes to work the bees to the actual hive and the queen.

Diana drew her own diagrams of the honeybee and designed and assembled the display for her exhibit. She presented a detailed recitation of the Life of the Honeybee to the spectators while her display was being exhibited at the fair.

"I have always been interested in the study of insects," said Diana, "so when my teacher, Miss Josephine Roush, told our seventh grade class about the science fair, I decided to enter an exhibit on honeybees."

At this point, the only thing Diana knew about bees was that they produced honey. She knew she had to learn more about them, so she went to the library and checked out the

book, "Starting Right with Bees". She said she became so interested that she read it through twice before returning it.

"It was like reading a fairy tale," she related, "with the Queen, tended by her guards, ruling over her castle and workers with great dignity!"

After reading every bee book she could get her hands on, Diana wrote a letter to The A. I. Root Company asking them for pamphlets, suggestions or any other information they could send her to make her display better. "Was I surprised and proud when I received a letter back from Mr. H. H. Root personally!", exclaimed Diana. "Not only did he send me the information I asked for, but he invited me to visit the Root Plant if I ever had the opportunity." She read over all the information that Mr. Root sent her and thought how much fun it would be to go through the Root Plant and watch the bee equipment being made.

So, a few days later, when Diana's parents asked her what she wanted for her birthday, it was only natural for her to answer, "I would like to make a trip to The A. I. Root Company."

Diana is the daughter of Mr. and Mrs. Fallis F. Paine, who are both school teachers. Mr. Paine teaches the sixth grade at Hamilton, Ohio and Mrs. Paine teaches the first grade in Middletown. They knew how sincere and interested Diana had become in beekeeping, so they promised her if she won at the science fair, then the trip would be hers.

Now, more determined than ever to have a winning exhibit, Diana contacted several local beekeepers and asked them for their help. They responded with enthusiasm when she explained her project and goal to them. "Mr. Eliff, Mr. Pickering and Mr. Oglesbee were just wonderful," she said. "They answered my many questions and gave me excellent advice on how to make my exhibit."

Mr. Bocho Eliff donated all of the equipment that Diana needed to complete her exhibit.

"It was at Mr. Eliff's bee yard that I got to open my first hive....and I might add....got my first sting!", Diana exclaimed, laughingly. "It was a cool day and I followed Mr. Eliff right up to the hive without any protection. The bees took one look at my red hair and BAMBO! I got it! But the sting

Mr. Huber Root, President of The A. I. Root Co., and Diana, take time during her tour of the plant to pose for a picture.

didn't hurt too much and Mr. Eliff gave me some gloves and a bee veil to use. We went right back out and opened another hive. It was while I was standing there working with Mr. Eliff, that I decided I wanted to become a beekeeper and have some hives of my own."

Later, when Diana told Mr. Robert Oglesbee of her desire to raise her own bees, he promised to help her get started this spring by giving her a hive of bees and the equipment she will need to tend them. "I am so excited," exclaimed Diana. "Of course, since we live in town, I will have to keep my bees on my Grandmother's farm in the country, but grandmother says she doesn't mind...and my brother, Robert, who is just nine years old, says he wants to help me."

Until Diana became interested in bees, her main hobbies were acrobatic dancing and taking care of her little black dog, named "Sugar". "Sugar", she explains quickly, with her brown eyes sparkling, was named a long time before she became interested in "honey".

Diana's exhibit won at the Science Fair, and, as her parents promised, she was awarded her trip to The A. I. Root Company.

So, the day Diana was 12 years old, she came to Medina as guest of Mr. and Mrs. H. H. Root and got to tour the entire Root Plant.

She watched the beehives and other equipment being made at the mill, she learned how smokers and extractors were made, she visited the honey store, watched how candles were processed and rolled, saw how foundation was cut, toured the printing department while it was in motion and spent several hours in the research laboratory. A luncheon was given for her, and she had dinner with Jack Deyell and then spent the evening at the Jack Happs.

During her tour, Diana was invited to meet some of the executives of the company, who were having a conference at the time. The men present were Alan Root, John Root, H. H. Root, Jack Deyell and Jack Happ. Mr. Huber Root asked Diana if she would like to give her recitation from her exhibit on bees and she said yes. She talked to them for about 20 minutes.

After she left to continue her tour, the men all agreed that she was well

Alan Root, General Manager, explains the operation of the Simplicity extractor to Diana.

Karl Rau, Research Engineer, explains the milling of foundation to Diana.

versed on beekeeping and must have studied long hours to acquire such knowledge. Jack Deyell remarked, "Did you know that much about bees at that age, Huber?" And Mr. Root replied, "I may have known that much about bees at 12, but doubt if I would have had the courage to talk so aptly before so many experts!"

Mr. Deyell took Diana to visit the Company's experimental apiary. He demonstrated to her the gentleness of Caucasian bees by opening the hive without a smoker or bee veil. As Mr. Deyell removed a frame with adhering bees and handed it to Diana for closer inspection of the queen, Diana gleefully commented, "This is the kind of bees I want to raise....they are gentle and don't seem to mind my red hair!"

When Diana was asked what she enjoyed most about her trip to The A. I. Root Company, she said, "Well, the lab was interesting, rolling candles was fun, and I appreciated everyone answering my questions....but most of all ....I enjoyed talking and visiting with Mr. H. H. Root." "Gee", she marveled, "he knows everything there is to know about beekeeping!"

The trip was quite a pleasant experience for Diana....and, it was quite a pleasant treat for The A. I. Root Company!

"It took a lot of reading, research, and studying to complete my display," says Diana, "but, my time and efforts have been highly rewarded. Why, to date, I have won three blue ribbons, a trip to The A. I. Root Company.... and I'm enjoying a brand new hobby!"

Jack Happ, Managing Editor, explains the preparatory work in printing Gleanings.

Test Your Weather Sense

A. B. KENNERLY
College Station, Texas

DO WEATHER conditions have any effect on honey flows? While all authorities will agree that weather conditions do influence the flow in one way or another, they are not at all agreed on how.

John Thomas, a graduate student at Texas A. & M. College has prepared a report on the effects of weather conditions on honey production. Here are some true and false questions prepared from his report. How would you answer them?

TRUE FALSE

1. — — Of least important influence on honey production is the amount of nectar secreted by the plants.
2. — — Bees quit gathering nectar when the temperature goes above 95°.
3. — — Bees quit carrying water to cool their hives when the temperature goves above 95°.
4. — — The purpose of nectar in flowers is to attract insects which are necessary to the pollination of flowers.
5. — — A high ratio of carbohydrates (sugar) to nitrogen in the plant favors fruit production.
6. — — High temperatures favor nectar secretion.
7. — — Excessively high temperatures have no effect on the flow of nectar.
8. — — Sweet clover yields best when the temperature is between 80 and 90°.
9. — — A fall, winter and spring with above normal temperatures bring a good nectar flow.
10. — — Only 9% of the honey crop is produced on days when the maximum temperature does not go above 80°.
11. — — Above average rainfall in the fall and spring increases the honey flow in the succeeding season.
12. — — Rain in the midst of a nectar flow depresses the flow for about 3 days.
13. — — Sugar content of nectar does not vary when the humidity is high or low.
14. — — Variations in humidity during the season have no effect on the quality of honey.
15. — — The more sunshine each day, the greater the amount of nectar gathered by the bees.
16. — — Light has little influence on bee flights.
17. — — Elevation has no effect on the honey flow.
18. — — A low barometric pressure is favorable to a good nectar flow.
19. — — South winds are favorable for honey production and east winds are unfavorable.
20. — — Beekeepers never have two bumper crops of honey in succession.

(For answers turn to next page.)

Answers to Questions on page 339

1. False. Even though weather conditions do affect or limit the nectar collecting activities of the bees, the most noted differences are recorded by the plants which produce the nectar.
2. True. Most authorities agree to this.
3. False. Bees still carry water for cooling the hive above 95°.
4. False. This theory remained for several centuries before botanists began to doubt it. In the past 30 years, substantial evidence has been used to show that the function of nectar secretion by the plant is to maintain a nitrogen-carbohydrate (sugar) balance.
5. True. And, a low ratio of carbohydrates to nitrogen favors plant growth.
6. True. Although there is some disagreement on this, many authorities do agree that higher temperatures give more nectar flow.
7. False. Research has shown that there are optimum ranges in temperature for the most secretion of nectar.
8. True. Some research shows this to be true. Sainfoin yields best at 60 to 65°, while heather in England yields best at 48 to 52°.
9. True according to some research. Below normal temperatures usually precede a poor nectar flow. A cold winter is not always detrimental to the honey crop in the following season
10. True for studies made in Page County, Iowa; also in Kansas. 53% of the total yield was produced on days with a maximum of 80 to 90°; 37% from 90 to 100°; and only 1% over 100°.
11. False according to most studies, although there is a difference of opinion. One study compared the average rainfall of the 10 best years with the 10 poorest and found only one year where there was an important difference.
12. True according to some reports. Sometimes a cold rain, accompanied by a sudden drop in temperature, has brought to an abrupt end the nectar flow for that year.
13. False. The sugar content varies inversely with the relative humidity.
14. False. Seasons of low humidity produce honey of higher quality, lighter color, heavier and thicker body than was produced during seasons of high humidity.
15. True. Clear days are more favorable for honey production. Sugar secretion of plants decreases in darkness.
16. False. Bees remain in the hives on heavily overcast days.
17. False. Some studies show that colonies located 4,000 to 5,000 feet above sea level yielded almost 3 times as much honey as those located between sea level and 1,000 feet.
18. True. Some disagreement here. Some have found a normal barometric pressure most favorable for a heavy nectar flow.
19. True. South winds usually bring clear, warm weather, east winds winds usually bring clouds and rain.
20. Your guess is as good as any. Records show it is possible to have bumper crops in successive years. Others show a definite record of good and poor years. But many other factors such as acreages planted to crops by farmers will have an influence.

"YOU'RE SIDETRACKING MY BEES, MOM - THEY OUGHT TO BE OUT AMONG REAL FLOWERS!"

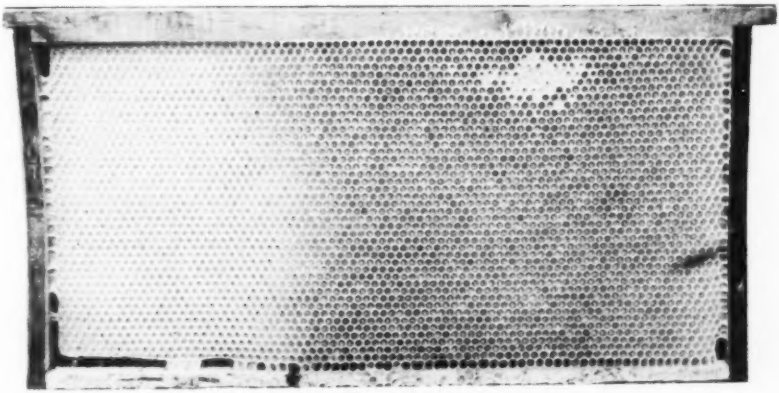
Turning Comb Honey Supers End For End

Do you know that bees will draw out foundation at the back part of the hive first?

DR. ROGER A. MORSE
Dept. of Entomology
Cornell University
Ithaca, New York

IT IS SOMETIMES mentioned in the beekeeping texts and articles on comb honey production that the supers should be turned end for end at least once during the honey flow. The reason for this is that bees, for some unknown reason, prefer to work more in the back of the hive than in the front.

This fact is shown very clearly in the illustration. This was a new comb of foundation taken from a hive during the summer of 1959. The picture was taken about mid-way in the honey flow and shows that the bees have drawn and capped a portion of honey to the right, and from the back part of the hive, while they are still in the process of drawing the foundation to the left, from the front of the hive.



Bees will frequently draw foundation in the back of the hive before that in the front, especially when the hive is tipped to the front.

Bees do not always act in this manner and whether they do so or not will depend upon the intensity of the honey flow and the location. Keeping the hive level will have some effect on how the combs are drawn. Tipping the hive to the front will intensify comb building in the back portion of the supers. During most of the year the hive should be tilted slightly to the front so that water

(Continued on page 378)

Handy Hive Handler

J. W. ADMIRE
Council Grove, Kansas

THEY SAY that necessity is the mother of invention. I think this is very true. AS we grow older we begin to realize we just can't do the things we did when we were younger. We employ some source of help and make devices to help us do the things which we used to do so easily.

When I began keeping bees there was not much need for moving bees from one location to another. Fifty years ago I acquired my first hive of bees. I now operate 200 colonies and move them from one location to another according to where there will be sweet clover, as that is the main honey plant in these parts. I just had to devise some way to get the hives loaded and unloaded at the different locations, so I had to think up some kind of simple tool for the purpose. I am enclosing some photos to illustrate the use of the piece of equipment that gives me great satisfaction because of the ease with which it can be operated and the small cost to make it. With this tool one has to have a two wheel truck to move the bees to the truck as the grocerymen use to handle boxes and the like around the stores.

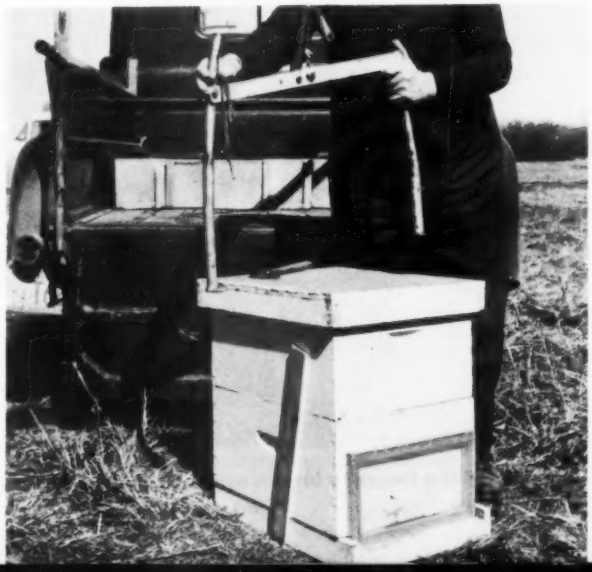
When I first made this tool I hooked it to a single story ten frame hive and had my son-in-law stand on top and with very little effort I lifted him up and around and lowered him into the pick-up. That was proof enough to tell me I could handle any hive I wished. Oh yes, I didn't tell you this fellow weighs a little over 200 pounds.

Picture 1

Now before I start to load the bees I put a screen on the front of the hive as shown in Picture 1. This screen is made so the bees can come out on the front for air, as the screen is framed with a three quarter inch strip of wood and slotted at the bottom so there will be a way for the bees to come out of the hive but cannot get loose. This being done I just tip the hive and slip the nose of the truck under the hive, tip it back and I am loaded ready to wheel the hive to the pick-up.

Picture 2

I set the hive down close behind the truck as shown in Picture 2. Now we are ready to attach the lifter to the hive.



Picture 3

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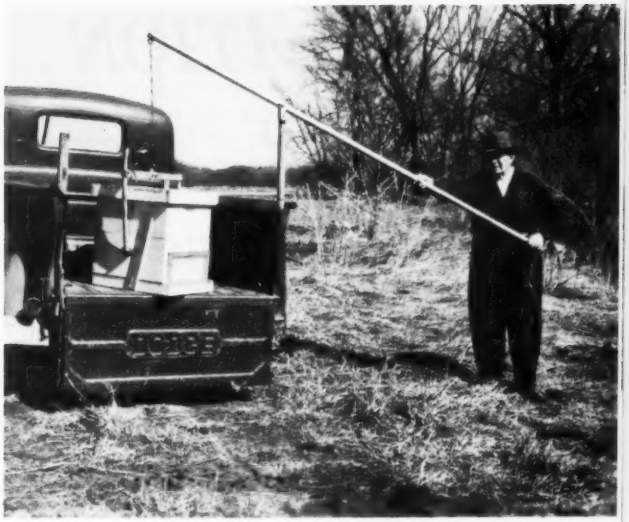
Picture 4

Pictures 3 and 4 show the lifter being secured to the hive. You will notice the pipes which go down the sides of the hive have feet to catch in the hand holds of the hive. Notice also the pipe on the near side of the hive extends up above the bar across the hive. This pipe is hinged so as to be moved in and out. The lever I am holding is then pushed down and makes the pipe rigid and the feet cannot slip out of the hand holds.

Picture 5

Picture 5 shows how easy it is to lift a two story hive.



Picture 6

Picture 6 shows the hive being lowered to the truck bed.

Picture 7

Now we dissamble the lifter so it can be loaded on the truck, Picture 7.

Well it looks silly but it surely works and saves all kinds of hard lifting. The most expensive part of this operation is the two wheel truck for moving the bees to the loader.

Now this is a very simple looking outfit, but for the man who has from a few to a couple hundred hives, you can't beat it. I have several yards scattered over the country and without something to help me move hives from one yard to another and load the heavy supers, I would just have to give up the bee business.

XUM

VENTILATION... the secret of comb honey

There are many tricks to a trade and we are fortunate if we can learn some of them from an authority.

IT IS THE DESIRE of every beekeeper, perhaps at sometime or another, to produce a crop of section comb honey. I doubt if there is another agricultural product as beautiful or that has received more publicity than honey in the comb. It was man's first natural sweet and has remained unchanged throughout these many centuries.

If we examine most of our present day literature we would find most writers claim that comb honey should only be produced in very heavy honey flows. One writer stated that the flow should be equal to a 200 pound average of extracted honey. If this writer had to wait for this kind of honey flow there would be several years in a row when comb honey would not be produced. I have never been able to foresee when a big crop was to be gathered. There have been many times when the prospects looked wonderful and yet the crop did not materialize. Starting with 1916 there have been only 10 years in this area when the writer has experienced anything like a 200 pound flow. Each spring we make the same preparation of equipment for the best crop possible. We don't know until well along in the flow whether it will be small, medium, or a bumper crop.

Making every effort to have equipment best suited for comb production, to have bees bred for this particular type of honey and to manage the colonies for comb honey will pay dividends in the lean and medium years.

Let us take up the subject of equipment. There is a difference in equipment for liquid and comb production. The bees could be the same but the extracted producer is not interested in capping pattern, whiteness or other features desired by the comb producer. Beekeepers (I mean writers) seem to forget that management of colonies change somewhat with the type of honey produced.

For many years I have been writing articles about comb honey production. After each article I receive quite a number of letters from readers asking advice about some piece of equipment or management. Last year I had several articles in Gleanings on a variety of subjects. In the May issue there was one short paragraph about the deep bottom board. To date I have received

CARL E. KILLION
Paris, Illinois

more inquiries about the deep bottom with the false bottom than anything, except the ventilated comb honey super.

These letters came from just about everywhere, including three from Australia. All wanted measurements and details of both the bottom board and false bottom. It would have been an impossible task to answer the questions individually. This article will give the information so that others may have it.

I am fully aware that the publisher of this bee magazine is also a manufacturer of fine bee equipment. They, however, wish to pass anything on to their readers which might improve beekeeping practices.

In my book "Honey in the Comb", page 16, I wrote "The bottom board was copied from the one used by Dr. C. C. Miller". He describes it as a "plain box, two inches deep, open at one end". In his book "Fifty Years Among the Bees," he writes: "A very nice thing in winter, and at any other time when there is no danger of bees building down, but quite too deep for harvest time". Later the good Doctor did try them for summer and continued to use them throughout the entire year. He had to make a slatted arrangement to be used beneath the combs which prevented the bees from building their combs down below the frames.

This Bottom Prevents Gnawing Comb Above Bottom Bars

In the paragraph in last May's Gleanings, I mentioned the fact that in my inspection work I find thousands of frames in hives where the bees have gnawed their combs away from the bottom bars (or never built down to them). In my conversation with the owners they seemed to think it natural for bees to do this. It may be a natural instinct, but there is a way either to fool the bees or give them what they want and it will eliminate all this space next to the bottom bar. In so doing there is considerable brood rearing space added to the brood frame.

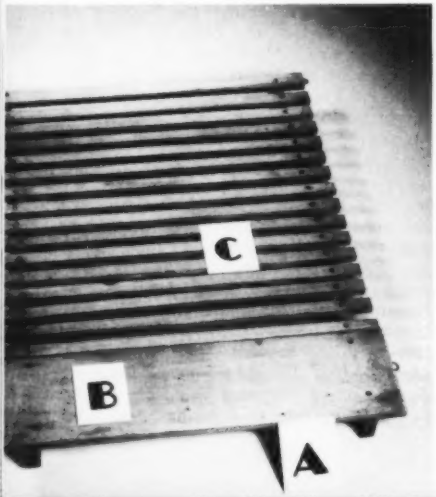
Five years ago we tried using tempered presswood for the bottom of our bottom boards and we like the idea. There has been only a slight tendency for the presswood to buckle a little. This has been so slight it hardly needs to be mentioned except some would ask that question. We made our side and back railings three inches wide. With our power saw we made a saw kerf in these railings two inches down from one edge (the top edge). This saw kerf was the width of the one-eighth inch presswood and reached approximately half way through the railings. After nailing the side railings to the back railing we simply slid the presswood into the saw kerf or slots and nailed a piece of material under the bottom of the presswood at the open end of the bottom board. Nails were driven into the ends of this strip through the side railings. The result was a very light weight bottom. (Figure 1.) This shows the slatted false bottom in position in the bottom board.

(Figure 2) shows the construction of the false bottom. The side railings are 18 inches long and approximately 1 inch wide and ½ to ¾ inches thick. (A - near one railing), B - is the wide board used in the front next to the opening. This is 14 x 4 x 5/16 inches in thickness. The purpose of this wide board is to prevent the bees from rounding off the front lower corners of the combs. It does this very thing, they do not gnaw the combs here. The

Figure 1. The deck bottom board and the false slotted bottom.

railings, C, may vary somewhat in width because they are made from scrap lumber. The ones in the photo are about ½ inch wide. Both B and C cross boards are 5/16 in thickness. The spacing between these cross pieces is about 5/16. There are staples under each bottom railing near the ends and extend down about 5/16, same as the ones shown on the sides. When the false bottom is in the bottom board there should be about 5/16 clearance between the top of the slats and the top edge of the bottom board. Bees will build comb beneath these slats and some fear may exist that one would find queen cells here. After almost 40 years I repeatedly claimed I had never found a queen cell beneath the false bottom. Last year we found one queen cell there (the first one).

Figure 2. False or slotted bottom. A. Railing; B. Wide cross board to be used next to the entrance; C. Narrow cross slats.



Other Advantages of the Bottom Board

We find there are several reasons why we like to use this type of bottom board. First it is ventilation, not only on the stands but when hauling bees. Being deep we can crowd more bees into the hive when hauling. The fact that it helps give us more perfect combs is another good reason. In winter if dead bees remain in the hive there is a little less danger of smothering the colony, by dead bees in the entrance.

When we move up to the brood chamber and have only nine frames with the follower board on each side we not only have a better ventilated brood chamber but an insulated one as well.

The super has perhaps received more publicity for its ventilation qualities than have our hive bodies or bottom boards. We find that ventilation in the production of comb honey is very important. The ventilation or air conditioning should be built into the equipment as much as possible. Comb producers cannot stagger supers (in a criss-cross manner) with openings for ventilation. Bees will not finish the comb properly near these open areas.

If we examine the super, hive body and bottom board we find that excellent ventilation has been made possible. With all these advantages there are some years when moisture content in honey remains high even though the hive had ideal conditions for evaporation. I have every reason to believe that the finished comb from such a ventilated hive will contain less moisture than from a hive having less ventilation.

For the past few years we have made every effort to reduce high moisture in our honey as quickly as possible after removing from the hive. We want our comb honey to contain not more than 17 per cent moisture.

We have been checking honey with

(Continued on page 377)

Research Review

DR. ROGER A. MORSE
Research Editor of Gleanings and Ass't. Prof. of Apiculture
Cornell University, Ithaca, N. Y.

Highway Spraying for Weed Control

THE USE OF herbicides for weed control along highways is increasing in most states. An example is found in the State of Oregon where in 1955, $78,000 was spent for chemicals while $146,000 was spent in 1958. Spraying along highways is done for safety reasons and also because spraying is cheaper and easier than mowing. However, the use of weed sprays does have a profound effect on the broad-leaved plants and therefore, many of our minor honey plants.

In a recent personal communication from the New York State Thruway Authority it is reported that along the 550 miles of thruway there are 300 miles of guard rails. A weed killer is used to spray a two foot strip under the guard rails. From the standpoint of economics it is easy to understand why this is done. It costs $50 a mile to hand mow under the guard rails with gasoline engine mowers, whereas weed killers may be used and the cost is only $8 per mile.

On the positive side of the ledger bird's-foot trefoil has proved to be an excellent plant for the mall and the roadsides along the thruway. The thruway seed specifications now call for a certain amount of bird's-foot trefoil as well as ladino and alsike clover. Reel type mowers are used on the mall and shoulders and the grass is cut at a height of three to four inches. This means that the bird's-foot trefoil can have considerable growth above ground and bloom over a long period of time. Five tractor mowers are used for every 30 miles of thruway.

There has been considerable cooperation between the New York State Thruway Authority and similar roads in other states. It may very well be that other states are also using clovers for their roadsides and that this may become an important source of nectar and pollen for bees in the vicinity.

The New York State group cooperates extensively with garden clubs and others interested in plantings. In fact it invites suggestions and cooperation from interested groups.

Crown Vetch

SEVERAL PLANTS are being tested in the southeast to assist in the control of erosion. Crown vetch appears to be one of the more promising cover plants under test. Crown vetch covers the ground well and spreads by means of underground stolons.

Professor E. J. Anderson of State College, Pennsylvania reported on the pollination of crown vetch in Gleanings in 1958 and stated that it "is noticeably drought and cold resistant and free from disease". It has also been used in Pennsylvania as a cover plant and in one particular location it has survived for more than 50 years.

Professor Anderson reports that the blossoms are self-sterile and that pollination is necessary. He also reports

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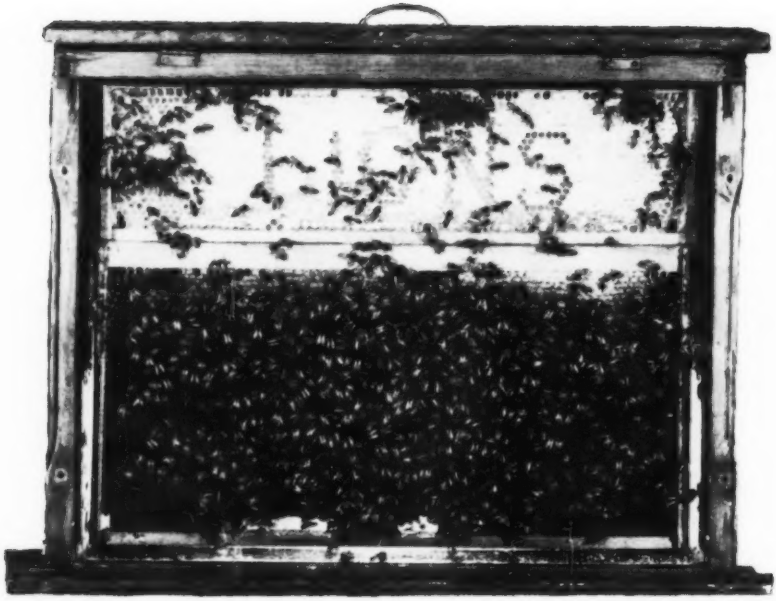

This observation hive was used in a talk on bees presented to a Lion's Club. Note the honey comb in the top of the hive. The effect was obtained by breaking the cappings to form the letters the night before the talk was to be given and by the next day the bees had removed the honey from those cells. —Photo by N. C. State College.

These four men appeared on the program of the 1960 Kentucky Beekeepers' Meeting held at the University of Kentucky in conjuction with Farm & Home Week. Left to right: Tommy Hines, Morgantown, State Apiary Inspector; James E. Dierken, Louisville, President, State Beekeepers' Association; William G. Eaton, Winchester, photographer and beekeeping hobbyist; (pointing at material used in talk on early beekeepers of Kentucky); Robert W. Vance, Pleasureville, commercial beekeeper.

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NEWS REEL

1960

Special Award of Merit

presented to

Paul S. Grierson

In recognition of outstanding contributions and devoted service in bee culture and attaining the highest ideals in our society

Whereas he has also given generously of his time and effort in service to youth and community

Therefore be it resolved that as a token of our esteem and affection we present this award of our appreciation.

By the executive committee
Essex County Beekeepers Society, Inc.

This is a copy of a genuine sheepskin parchment "award of merit" presented to Mr. Paul Grierson by the Essex County Beekeepers' Society, Inc., for outstanding service and contributions to his fellow beekeepers. — Scroll designed and lettered by L. Panagini.

A very attractive apiary located near Carter's Bridge, Va. This apiary is managed by C. H. Perkey of Charlottesville, Va. These bees are important for the pollination of legumes.

Editorials

Kentucky Secures Apiary Inspection

ACCORDING TO THE April 1960 issue of Kentucky Bee Line, official publication of the Kentucky State Beekeepers' Association, Kentucky will have its first full-time bee disease control agent. The official notice that funds would be made available for this work was received from the Commonwealth of Kentucky Department of Finance.

The appropriation act of the 1960 General Assembly, includes a fund for a full-time, also a part-time, apiarist, and the necessary travel to provide inspection and educational services.

Kentucky is credited with having 118,000 colonies of bees in 1959. Portions of the state are favorable for honey production and commercial beekeepers can now expand their holdings with the assurance that bee disease will not jeapardize their future activities.

We congratulate Kentucky on this recent attainment.

Swarm Control

IT SEEMS LIKELY that more has been written on this subject than on any other phase of beekeeping. A former editor of this journal, George S. Demuth, had a long and interesting experience with bees and was considered one of the outstanding comb honey producers of our country. He became apicultural assistant to the late Dr. E. F. Phillips of the Bureau of Entomology, Washington, D. C., and it was during his eight year service in that capacity that he wrote farmers' bulletin "Swarm Control" - No. 1198 which is considered a classic in beekeeping literature.

Mr. Demuth was of the opinion that while the cause of swarming has not been definitely determined one of the factors present in normal swarming is congestion of bees within the brood nest. Some of this congestion is brought about by a large number of emerging bees which are not old enough to be fielders.

The bulletin in question emphasizes the importance of having colonies headed with young queens as a swarm control measure. The bulletin also states that if a young queen is introduced into a colony previous to the swarming season; after a period of queenlessness, so that there is a period of ten days during which no eggs are laid, there is usually no attempt to swarm during the same season, especially if this interval of egg laying occurs late enough so that the young queen is not able to reach her maximum of egg laying before the close of the honey flow.

The bulletin also states that if the old queen is removed from a colony prior to the swarming season and a young queen is introduced at once, without an interval of no egg laying, the tendency to swarm may be reduced little, if any, but if the old queen is removed or caged within the hive for ten days, then rein-

troduced, no queen cells being permitted to mature in the meantime, the bees give up swarming frequently for the remainder of the season.

It would seem advisable for comb honey producers to keep in mind these principles in apiary management. However, for the production of extracted honey, giving ample comb space, which means putting on supers a little in advance of the time they are actually needed, tends to relieve congestion within the hive and is an important swarm control measure.

Bumper Crops Occur Periodically

DURING THE YEARS we have observed that a good year for honey production is usually (but not always) followed by a lean year. We recall the seasons of 1920 and 1921, both excellent for honey production in this area. Naturally honey crops vary in different states. One state may have a bumper crop and during the same year a nearby state may experience a failure. Apparently much depends on the weather, especially rainfall.

During an unusually good honey year when supers are filled up as fast as they are put on, it seems a little difficult to envision a very lean year, when perhaps bees have to be fed in order to keep them alive. During a good year the natural tendency is for beekeepers to expand, perhaps beyond reasonable limits. Some commercial beekeepers may buy new trucks and other equipment when it may not be actually needed.

Commercial beekeepers who depend on surplus honey for their livelihood should have their bees in areas where total failures do not often occur. Of course, it is possible to move bees to localities where prospects appear to be favorable for a crop. However, this requires time and labor. Beekeepers who are prepared for migratory beekeeping are able to meet such emergencies.

It behooves commercial beekeepers to be ready for crop failures by being ready to move their bees to good bee pasture, or, by maintaining what may be called a sinking fund calculated to tide them over lean years.

National and State Honey Shows

IT GOES WITHOUT SAYING that national and state honey shows help to bring honey to the attention of thousands of people who otherwise would not see it displayed. As a rule, such honey displays include observation hives of bees which show the inmates of the hive. If the displays are attractive, also if appropriate printed material on bees and honey is available for interested people, this results in a growing demand for honey and a greater appreciation of the value of honeybees in the pollination of farm crops.

Beekeepers should take a greater interest in having displays of honey that will attract the attention of throngs of people who visit such displays each day. Our industry needs more such publicity. Beekeepers over the country are urged to take an active part in helping to make the coming National Honey Show in Detroit, Michigan, September 2-11 the best ever. (See page 369 this issue.)

Mother Nature Sometimes Curbs Swarming

IN SOME AREAS of the north, populous colonies with an abundance of stores early in the season build up rapidly to abnormal strength during the spring honey flow and start building queen cells. When this condition occurs supers are usually put on and queen cells destroyed.

Some years ago during a warm spell of weather in late April, strong colonies in the Root Company apiaries around Medina began building queen cells. We rushed supers onto the hives, but the following day cold weather came, also a snow storm which caused the bees to destroy the cells started.

The moral seems to be that since a warm spell in early spring is likely to be followed by a cold spell, we shouldn't get unduly excited over early queen cells. Mother Nature usually takes care of them. However, if she doesn't, proper swarm control measures should be applied.

Live and Learn

PROPOLIS PETE

THINGS JUST CAN'T be as good as they seem with me. After coming through the winter in such good shape, the law of averages is that a little hard luck should show up. What it will be is guess work, but in the condition that my bees are, early swarming could be the gimmick. Our season is at least 10 days late, yet the bees are ready now for a honey flow, and you know the old proverb about Satan finding work for idle hands.

After all is said and done, the best way to retard or prevent swarming is to do what has to be done early enough. There are many reasons why bees decide that half of them can do better elsewhere, but the main reason is congestion in the brood nest. Correct that situation and you can be reasonably certain that nine out of ten of your colonies will stay on the job and put up a crop for you.

It just isn't enough to put plenty of supers on. If that were all there is to it, all you would have to do would be to put half a dozen on when you unpack, and then go back in the fall to get a couple of hundred pounds of honey from each colony. The trick seems to be to put them on just before they are needed. When is the right time? That is one of the things that you will have to learn for yourself. There are no rules. It's just that you have to imagine that you are a bee, and then how you would feel when you see the walls closing in on you and no place to put whatever you bring in. You are not so much interested in elbow room half a mile from the nursery. You want room to work where the work is being done.

Maybe that isn't much help to you, but that is about the best way that I can describe what I think are the conditions that lead to swarming.

In time you will learn to recognize them, and while I don't claim to know much about it, here is an example of how I am going to handle it, and what I have done so far. In a particular case last month I told you about uniting a destitute colony with what seemed to be a good queen, with a queenless colony that was rich in stores. If I remember correctly, I made this union on March 29th. Today, April 30th, the colony had built up to the point where it was far too strong. I am pretty sure that they would swarm if I didn't do something about it. They are starting to build those little cups that can be turned into queen cells overnight. What could be done about it now?

Well, for one thing, I could divide the colony and get back the colony lost when united. I would then have two fair colonies that probably would build up to give me a small surplus each. But this would mean sending for another queen, and if there were any delay, it would cost honey later in the season. So instead, I am going to try to keep these bees just disorganized enough to keep them trying to build up, instead of letting them get the feeling that they are rich enough and strong enough to open up a branch office.

The bottom body, which had been full of honey after the union, and the top body which now had brood in eight frames, a lot of which was already sealed, were reversed. The bottom body now had quite some empty space, because the bees had used a lot of honey for the brood, and also seemed to have moved quite a bit upstairs to be nearer to the brood. Now there was a lot of room in the top body, but there were so many bees that I figured that it wouldn't be long before they wouldn't know where to go, to be out of the way when they couldn't fly out. So, in addition to reversing, I gave them two shallow supers. I can't say for sure that this will stop them from swarming, but I do know that before I had the cover on, those two supers were full of investigating bees.

It could be that the queen will go up and lay in those shallow supers. They have done it before, and maybe it is a good thing at this time of the year. At any rate, when the honey flow starts, I'll keep on adding supers just as fast as they will occupy them. At some

(Continued on page 382)

When Charlie was asked why he didn't put a motor on his hand extractor his answer was, "Maybe I will when I get older, but now 'kinda' like the exercise".

Ninety-three and still a beekeeper

MILTON H. STRICKER
Stockton, N. J.

THE MOST YOUTHFUL beekeeper I have met recently is Charles Heath of Frenchtown, New Jersey. His vigor in everything he does, the interest he has in his bees, and every living thing he comes in contact with, would put any 20-year-old to shame.

February 4th was a warm sunny day. Bees were having an unusual flight, so I stopped in the well protected apiary to see if "Charley" was around. He was, checking his 40 colonies, and hustling around so that I had to step to keep up with him. His colonies were all alive and all had started brood rearing. He was pleased that there was still ample stores left in all of them. When I asked him about this, he said: "Well, we have had a mild winter plus I left all the fall crop. I only extracted the summer honey last year."

Charley went on to say that the '59 crop had been excellent, and he had been very busy extracting. And he would be, since he works the bees all himself, extracts with a hand powered Root 2-frame reversible extractor that he bought more than 40 years ago. When I asked him about putting a motor on it, he said: "'Maybe I will when I get older, but now 'kinda' like the exercise."

As for exercise, this is the first year in about 20 that he didn't walk a five-mile trap line every morning. I asked if he had decided it was too much for him and he replied: "No, there just wasn't any money in it, but I still take a walk over the old line to see how things are."

Mr. Heath then proceeded to show me his various colonies, and tell me the history of some of the queens. He is very much interested in different blood lines and tries some queens each year to see which strains will give him the biggest crop. He raises a few each year from promising queens in his apiary and likes to do it to "keep his hand in".

He dipped into the past, saying: "The old E. G. Carr strain of queens were great producers. They were as mean as 'iron' but they could wad in a good crop". I asked about this meanness. "Well, I never cared how cross they were, if they got a good crop and I still feel the same way!"

(Continued on page 378)

How to build an:

Apiary Tool Box

NORMAN E. WEST
Mansfield, Penna.

I'VE READ MANY articles about beekeeping, and I've been the recipient of much advice on the subject. But so far, I have not come across an item which has been so handy for me as the apiary tool box. Apologies to all you who already have such a box among your beekeeping equipment.

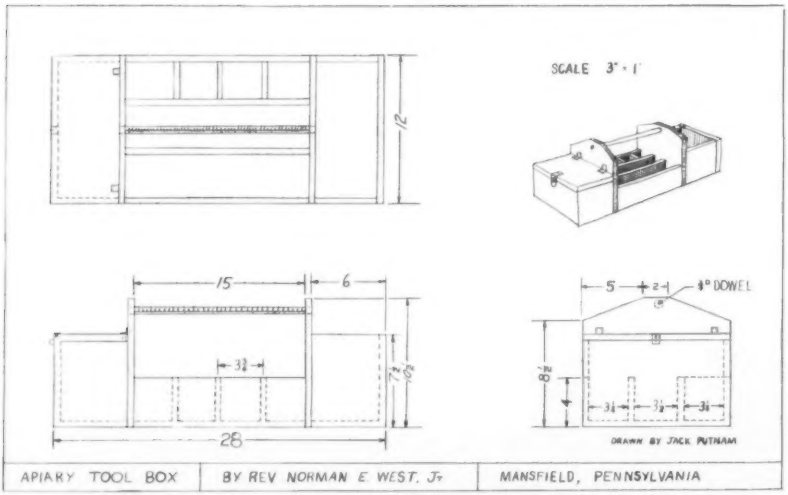
To make this box, you will need a quantity of ½" plywood and several pieces of ¼" plywood, enough asbestos to line one of the end-boxes, a brass chain about 5" long, a small hasp, two small brass hinges, and a ¾" dowel 16" long. Of course, nails and screws and a little paint help to do the job.

The bill of material you will need is as follows:

2 - ½" x 10½" x 12"
2 - ½" x 7½" x 12"
4 - ½" x 6" x 7½"
4 - ½" x 4" x 15"
3 - ½" x 4" x 3¼"
1 - ¼" x 6" x 12"
1 - ¼" x 12" x 28"

A smoker fits nicely in the open end. The smoker plug is always handy if it is chained to this end of the box. The opposite end contains smoker fuel.

The middle of the tool box is good for a whole conglomeration of beekeeping tools—all the little things that get mislaid just when you are ready to take off for the bee yard—hammer, tacks, wire nails, matches, and maybe even a thermos of coffee if you want a coffee break while you work.



Honey Strawberry Crunch.—Photo courtesy Kellogg Co.

Strawberry Time Again

MRS. BENJ. NIELSEN
Aurora, Nebraska

HOW EAGERLY we await the first ruby fruits glistening in the strawberry patch! The first ones we eat au natural—no need to dress them up. And, as I have said before, the Nielsens never tire of these luscious berries, whole, sliced, or mashed, drizzled with Nature's golden sweet. Do try them this way.

For very special occasions may you enjoy these "dressed up" versions offered this month. Always save out the nicest shaped, reddest berries for garnish, drizzle lightly with honey, turning gently to coat evenly. Then chill thoroughly until serving time. Um!

Honey Strawberry Crunch

Two cups sliced strawberries, ⅓ cup honey, 3 tablespoons cornstarch, 1 cup cornflake crumbs, 1½ cups sifted flour, 1 cup brown sugar, firmly packed, 1 teaspoon cinnamon and ½ cup butter, melted.

Combine berries and honey and allow to stand until juice is formed. Drain juice; measure; add water if necessary to make 1 cup. Blend in cornstarch. Cook, stirring constantly until thickened and clear. Skim if necessary. Remove from heat; cover. Blend crumbs, flour, brown sugar, cinnamon and melted butter. Press ⅔ of the crumb mixture firmly in bottom of 9x9-inch pan. Cover with strawberry slices and thickened juice. Sprinkle with remaining crumb mixture. Bake in slow oven, 325°, about 55 minutes.

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X FACTOR in Swarming

ROBERT M. MEAD
White River Jct., Vt.

Glands play a very vital role in the functions of man; in his emotions, his thinking, his work, and the very fact that he lives. Are bees also affected by similar glands?

FOR UNTOLD generations beekeepers have marveled at the mystery of swarming. In the early years of beekeeping it was a welcome factor. It was the one means by which most beekeepers made increase and in the comb honey years it was the prime swarms often enough that turned out the biggest crop.

Then all this changed. Beekeeping practice in general went through a great upheaval with the invention of a practical movable frame hive and with a decided shift to extracted honey. Large outfits with many outyards came into being and suddenly swarming was a nuisance.

Literally dozens of methods were then devised to prevent swarming. Brood was lifted to an upper story. More room was given, queen cells were cut, hives were requeened on a yearly basis. All of these methods tended to remove the visible causes of swarming and all of them worked—sometimes. But what has always confounded beekeepers is that some years the bees swarmed anyway. The question is, what causes swarming?

Most of us recognize the visible factors that cause swarming. Crowding, excess of young bees, partial failure of queen, loafing, and, of course, race of bees with built-in swarming traits. However, we can correct all these factors, insofar as is humanly possible, and then in that odd year the bees still swarm so we are right back where we started.

What Actually Causes Swarming?

I will attempt to answer and hope that you can follow my line of reasoning.

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The swarming of bees is a secondary reproductive factor. The primary reproductive factor, of course, is sex or the simple mating of male and female, something that occurs in all the higher forms of life. With the honeybee the primary factor is the union of the virgin queen with a drone (or drones). That accomplishes the fertilization of that queen but in the case of honeybees it does not accomplish all that nature demands. It does not, of itself increase the number of swarms of bees.

Therefore, we have the secondary reproductive factor, swarming. If it were not for swarming, man would not have any honeybees (of present type) to work with. As nature regards it, a swarm of bees is expendable. It may lose its queen at a time when it cannot requeen itself. It may starve to death. It may be destroyed by any of a dozen accidents. Therefore, it is absolutely essential, under natural conditions, that bees swarm, that the risk be divided, that new colonies be established so that between new swarms and old swarms, no matter what happens, some few consistently survive.

Secondary Reproductive Factors Are No Novelty in Nature

Dozens of different forms of animal, bird, and other life exhibit secondary reproductive factors and with many of them the secondary factor is just as essential to their existence as the primary one.

One example is the salmon that spends most of its life in the ocean but spawns in fresh water. Few would regard its migration from the ocean to the river as sex, yet it is a definite reproductive factor. Without this migration the salmon does not reproduce and soon dies out.

What causes swarming? I have shown a reason but not a cause. As one gets deeper into the mysteries of life, explaining why always gets more and more difficult until at last we come to the mystery of creation which we cannot explain at all.

However, I believe the cause of swarming can be explained, at least in outline.

I would like to begin by stating the fact that in nature nothing just happens. There is always a cause and an effect and man is often fooled entirely because he witnesses only the effect. Or if he thinks he is careful he observes only external superficial causes and not the real basic cause. It is common to say that swarming is caused by overcrowding yet almost every experienced beekeeper has seen terribly overcrowded colonies that did not swarm. So that answer becomes, upon close examination, like so many other answers, no answer at all.

To find the real answer to swarming then, we have to get away from superficial observation and dig deep into the things that make life possible. One of the most important factors in life is the hormones and these are complicated chemical substances produced by our glands. It can be shown, in man, that everything a man does, his emotions, his thinking, his work, the very fact that he lives, is a result of the complicated interaction of these hormones.

It is assumption, but I believe sound thinking, to assume that the life of a bee is similarly influenced by the secretion of its glands. Now the actual inciting factor in swarming, as far as I know, has never been isolated; there is no mention of it in beekeeping literature. But, based on a lifetime of study and observation I believe that the actual cause of swarming is a hormone, or perhaps several hormones. I cannot name it so I call it X-factor. I have arrived at this conclusion because only a hormone, or X-factor, fits into the spot where swarming becomes a mystery and our knowledge is lacking.

If it follows the general pattern of all hormones then X-factor is present in the body of the bee at all times in exceedingly minute quantities. For most of the year, however, its action would be smothered, or quieted, by the action of some other hormone. At swarming time, however, it would be secreted in larger quantities and probably in relatively tremendous amounts in the minutes that the swarming hysteria is at its climax.

The action of the bees at the moment of swarming lends considerable support to the X-factor theory. If the bees acted solely on an instinctive nervous basis to get out of the hive they would surely all rush to the entrance to escape since every bee in the hive over a few hours old must know where the entrance is. Yet what actually takes

place is somewhat different. There is tremendous excitement but instead of every excited bee rushing directly to the entrance what is produced is a sort of churning, somewhat circular motion over the combs with part of the excited mass constantly being siphoned out the entrance. The hysteria subsides before all the bees escape and thus the old hive is saved from complete depopulation. Such an action could only take place if induced by the explosive release of a hormone factor.

Now if swarming is caused by a hormone what incites the hormone so that we get excessive swarming in odd years?

I believe that the inciting factor may be many things in general but one thing in particular. To explain: the factors we have observed all these years, crowding, unbalance in population according to age, etc., probably do have their effect. Yet there has to be some overriding decisive and variable factor to account for the swarming years. Just what this factor is I can only guess but so many hundreds of living things react to the sun in some manner that I keep coming back to that as the most logical instrument.

We already know that bees react with great vigor to the sun, both as to the sunshine that man sees and to rays that are off the spectrum for man's eyesight. We also know that the sun is a variable furnace and that radiation reaching earth from it is affected not only by disturbances on the sun (sun spots) but by atmospheric conditions here on earth. Swarming varies in intensity then as X-factor is variously excited by some factor in the sun's radiation, possibly the intensity of ultra violet.

How can the existence of X-factor be proven? True, it is not easy. I have arrived at its existence by deduction. Actually I believe that it can be produced as a very real, visible and chemically identified substance. To do this would require a team of research scientists and perhaps a half million dollars. Given that, I believe that X-factor could be identified in from two to three years and that some real knowledge could be had of it in five years.

However, as this is not likely to take place right away beekeepers can rest assured that when dealing with swarming they are dealing with a natural force, a force that in some seasons seems to be an irrestible force. When you cannot stop swarming, remember the legend about King Canute. He tried to stop the tide from coming in and he also had his troubles.

Are You Allergic?

LAVELLE SHERBURN
Berrien Springs, Mich.

IF YOU ARE ALLERGIC to bee stings....a good remedy is a heaping teaspoon of baking soda stirred into a glass of lukewarm water and drank immediately after being stung, according to Mr. Lavelle Sherburn, Berrien Springs, Michigan.

"When a person becomes ill from a sting, the best advice is to call a doctor", writes Mr. Sherburn, but a doctor is seldom near an isolated bee yard, so it's up to a beekeeper to help himself."

Mr. Sherburn says when he works his bees, he always carries a first aid kit which includes baking soda and water. He says that he has used this antidote often and it always works. He says that many of his friends have used it also and have received the same excellent results.

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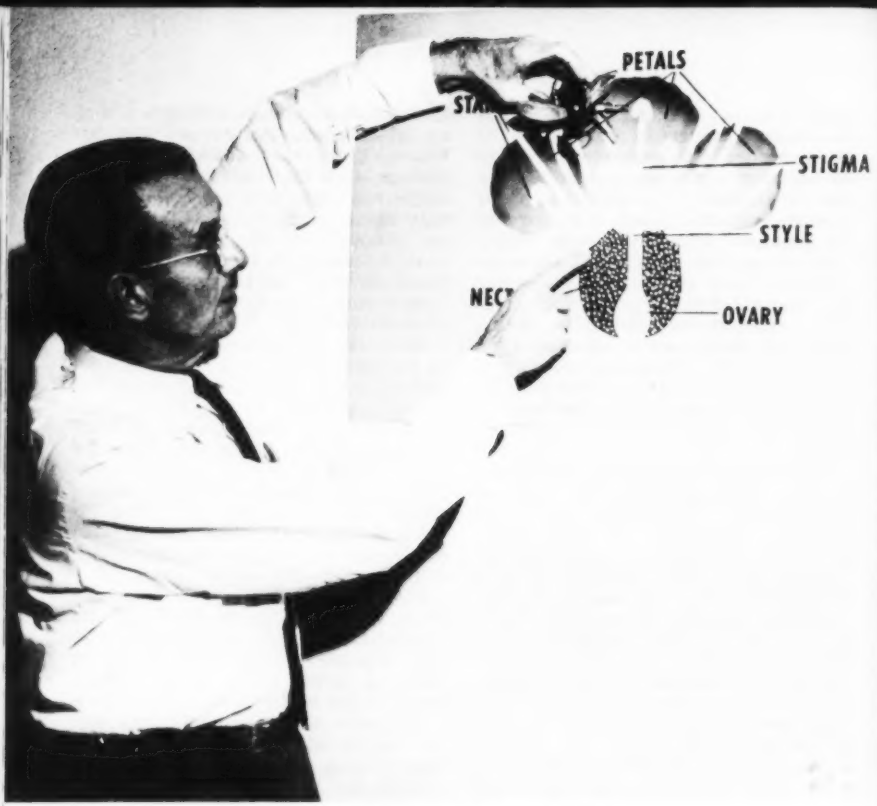


Model of a bee and diagram of flower parts help Prof. Robert S. Filmer, Rutgers' bee specialist, show what happens when a bee visits a flower.

A Professor of the Bees

BEES MADE a big thing of their honey production line in New Jersey last year. This may not be news to the bees, but it's a source of sweet satisfaction to a certain Rutgers professor.

Robert S. Filmer, of 103 Lawrence Ave., Highland Park, entomologist at the Experiment Station, has been occupied for more than 30 years with studying bees and teaching their ways.

You might call him the Garden State's Mister Bee.

He is in demand as a speaker at meetings of beekeepers' associations of which the state has at least seven, each with a membership of 100 or more.

These are part-time operators, riding their hobby during every spare moment. In addition there is a statewide association whose members depend on bees for a living.

As in any hobby group, enthusiasms sometimes wane, but for every beekeeper who gives up, another eager newcomer takes his place. This naturally brings new demands for knowledge and a constant flow of questions that don't always seem to be answered just right in the textbooks.

But to Prof. Filmer the story of the bee never grows stale, a fact that becomes evident when he talks at a meeting or conducts a class during the beekeepers' short course that has been a fixture at the College of Agriculture for several years. The course won't be given this year, though, to avoid conflicting with sessions of the Eastern Apicultural Society to be held at Rutgers in June.

Naturally, Prof. Filmer shares the pride of the state's beekeepers in their production of 990,000 pounds of honey in 1959. What the bees don't know, though, is that their honey making weighs far less in the Garden State's economy than their service as pollinators.

Bees are vital to the fruit industry, a fact that fruit growers have long recognized. When the seemingly endless rows of peach or apple trees burst into bloom, bees are on hand to tend to the job of pollinating. And this is no accident, because fruit growers hire colonies of bees for the occasion.

Beekeepers follow the season from South to Central Jersey, trucking their hives from orchard to orchard until the job is finished.

So it is with the cranberry bogs, where the native bees are not up to the task of making the rounds of all blossoms.

North Jersey fruit growers are better off. More widely distributed than South Jersey orchardists, they often have beekeepers as mutually helpful neighbors.

Fruit and vegetable breeders around the Experiment Station need no reminder of the helpful services of Bob Filmer's bees. Plants to be bred are commonly grown in outdoor screen cages to keep wild insects out. Then a bee colony is moved inside to carry on the pollination job.

It's possible for a researcher with a camel's hair brush to cross-pollinate a blossom, but a bee can do it quicker and with a lot less fuss.

Men have been studying bees for so long now, that you'd think all their secrets would be out in the open. Not so, says Prof. Filmer.

Bees have a way of getting into the headlines. Or hadn't you read about the claims of youth-retentive effects of royal jelly? This is the substance that bees feed to their queen to keep her young and active.

And how about the good-for-you honey and vinegar mixture prescribed by a physician who has won himself a nation-wide reputation?

Bob Filmer isn't taking sides in discussions about these. He'll go on enjoying honey on his hot biscuits and tolerating as many as 100 stings a day from annoyed bees. It's a sweet business, and he's happy to be part of it.

NOBODY TOLD ME

RAY L. McLESTER
Paragould, Arkansas

IN ORDER to "break the ice" and induce participation by the group, when we addressed a High School Senior Class on "Beekeeping" we started by asking a few simple questions on bees and waiting for the answers.

Question: "What comes to your mind when somebody mentions a queen bee?"

Answer: (by a girl) "Queen Elizabeth II of England."

Question: "What do you think of when we speak of comb foundation?"

Answer: (by a boy) "A concrete block under a bee hive."

Question: "What does a frame of honey mean to you?"

Answer: (by a boy) "A strip of material around a pretty girl's picture."

Question: "How do you think bees make honey?"

Answer: (by a boy) "They sting the flower until the juice is cooked."

Should not beekeepers make a greater effort to talk about bees in terms that laymen, or non-beekeepers can understand?

Labor Saving

BRUNO RACINE
Laprairie, Quebec, Canada

IN MY REGION situated 20 miles south of Montreal, the clover honey flow usually starts around the 18th of June. To be effective, the following swarm control system should be used a little before or at the start of the honey flow. Usually, I start around the 15th. At this date all the colonies have two brood chambers containing an average of 12 to 17 frames of brood and an average of 15 to 20 frames of bees,—and no supers. All colonies are about the same strength, having been equalized around the 10th of May.

After opening the hive, I put an acid board over the second brood chamber, containing an average of six to nine brood frames, mostly young brood. A few minutes later, the queen and all the bees have moved down into the first brood chamber (three or four colonies may be worked simultaneously with the pads). When the work is completed in a colony, the next one is ready for processing and so on. Now I take away that second beeless brood chamber and put on a new second brood chamber with nine empty combs, dark if possible. Now, the queen excluder is set in place, and finally the beeless brood chamber is set on. The swarm control work is over.

Eight or ten days later the cells are not even destroyed in the brood separated from the queen. This operation is time consuming and not necessary and the colony treated will be swarm proof just the same.

This yard fully controlled and ready for the crop.

"While using this system it is easy to check the condition of the colonies."

Swarm Control

Thirteen days later after that second brood chamber has been separated from the queen, the first virgin queens will emerge from the numerous cells, and according to the law of survival, one virgin will come out and the others will be killed and the late cells destroyed. At this time there are only seven to eight days of capped brood to hatch and this means that the great force of nurse bees have all left to join the laying queen in the first story. Now this one virgin queen, among so many irritated field bees and with so few young ones, will not survive very long. When taking off the crop, you will find in most of the hives the dead virgin on the queen excluder.

In 1946, when I innovated this system, I was afraid that the use of an acid board, directly over the brood chamber, would have bad effects on the young brood, especially at the top of the frames near the pad. To make sure, that year I processed only five colonies with the pad. I checked the brood closely thereafter, but could not detect any after effect, and the system was giving hope as no swarm came out from these hives.

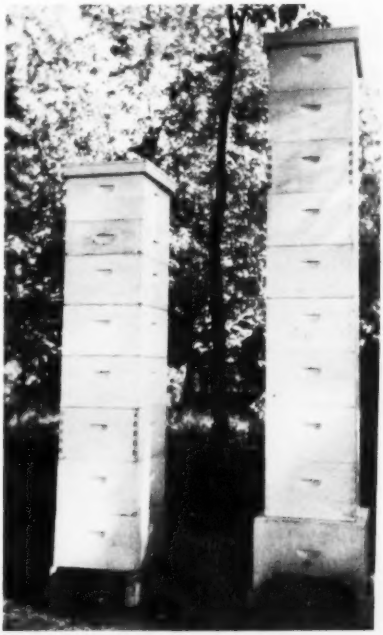
The second year, one-fourth of the yard was treated with these pads without bad effects; during these two years, the rest of the yard was "Demareed" as usual.

In 1948 the entire yard was processed with the acid boards with three per cent swarming, and thereafter I never used any other system, and the swarming kept an average between two to five per cent, about the same average I had, when I was using the "Demaree Process".

While using this system it is very easy to check the condition of the colony, making sure at a glance that the queen has not stayed up.

With this system, the colony stays well organized after the control. The

(Continued on page 382)



Colonies like these are only possible if swarm control is practiced.

Jack Deyell points out the winter cluster to Diana Paine during her visit to The A. I. Root Company.

Talks To Beekeepers

M. J. DEYELL

"A Swarm in June - - Worth a Silver Spoon"

WHETHER OR NOT the above is true would depend somewhat on the size of the swarm, also the time of the month the swarm would issue. The size and quality of the silver spoon would have to be taken into consideration.

Some Beekeepers Want Swarms

When I kept bees commercially in Michigan years ago I got acquainted with a neighbor beekeeper who, when I called on him would say "How many swarms did you have today"? When I told him I had very few he was rather surprised, then would proceed to tell me how many he had. A large swarm

that issues at the beginning of a main honey flow is likely to put up a good crop of honey when conditions are favorable for nectar secretion. When such a swarm is put into a new hive placed on the stand from which this swarm issued and when the parent colony has been moved to a new location 10 to 15 feet away, the field bees in the parent hive moved aside will naturally drift back to the hive on the parent stand and help to strengthen the swarm. The parent hive moved aside, should under normal conditions produce a young queen and the colony should gather enough honey for winter stores and be in prime condition the following spring.

Beekeepers who follow modern methods of apiary management try to prevent swarming, which, if it occurs, means a division in the population of strong colonies.

Swarm Control in Section Comb Honey Production

The first year I was in Michigan I operated over 200 colonies in one apiary, 12 of them for comb honey and the remainder for extracted honey. The colonies occupied single story hives during the spring honey flow which consisted of fruit bloom, dandelion and wild cherry. It was necessary to give the strongest colonies a deep super of combs or rather supers containing frames with full sheets of foundation, as I did not then have any drawn combs. The beekeeper from whom I bought the bees produced comb honey.

Swarming was rather bad in the comb honey colonies. I had to have the queens' wings clipped so that the swarms could not go to the woods. One forenoon I had five swarms out at about the same time hanging on apple trees. I happened to be on hand when the swarms issued and I would catch each queen that was clipped and put her into a small cage, then push the cage into the hive entrance and put a stone on top of the hive so that I could tell later on, which hive sent out a swarm. The swarms in the air or clustered temporarily on branches of trees, would eventually return to the hives from which they issued. I would then put each caged queen beside the follower board in the upper comb honey super and destroy all but one queen cell in the brood chamber, aiming to leave the best cell. In due time, barring unfavorable conditions, a young laying queen would be found in the brood chamber. The old queen caged in one of the supers would be fed by the bees. She would be used later on, if needed to replace a worthless queen. I have kept caged queens in supers for almost two months.

This method of handling swarms has an advantage in that the population of the hive is not divided, requeening is accomplished and when the young queen starts to lay, the honey will be carried up into the supers in order to provide comb space for the queen to lay eggs. If some of you comb honey producers try out this method let me know how it works for you.

Importance of Minor Honey Plants

In Michigan there seemed to be a great abundance of spring honey plants. The first year I was there, as I watched the bees entering the hives, carrying pollen of many different colors, I naturally wondered about the

A 14 pound swarm captured June 19, 1951. We weighed the hive before and after the bees were put into it.

XUM

sources of the pollen. The second year I was in Michigan I had more time to get out into the fields to observe honey and pollen plants. It is an advantage to have bees located where there is an abundance of nectar and pollen plants. During the spring months colonies of mediocre strength will build up rapidly and be ready to take advantage of the major honey flow when it starts.

Ample Pollen Supply Essential

Beekeepers in some areas claim that the supply of pollen early in the season is inadequate for normal spring build up and find it necessary to feed a pollen substitute or supplement. Other beekeepers say their colonies gather too much pollen. In this area pollen seems to be quite abundant except during an occasional season when early frosts destroy the early bloom.

Perhaps some of you who observe closely what goes on in brood chambers during the spring months, have seen practically solid combs of fresh gathered pollen and you perhaps wonder if it would be used up by the bees. If there should be a cool spell following a good nectar and pollen flow, when the bees are unable to work normally, due to bad weather conditions, you likely have observed that practically all of the pollen collected by the bees during the good weather has disappeared, being used up for brood rearing. As already stated in previous talks, authorities tell us that one pound of pollen is needed to produce one pound of bees.

Keeping Queens in Mailing Cages — Ants Kill a Queen

I received a few queens from the South about April 18. The weather was rather cool at that time for opening hives so I put the queens in my office desk drawer. Next morning when I looked at the cages I found that small red ants had been attracted by the bee candy in the cages. They had already destroyed one of the queens. I shook all of the ants out of the remaining cages, then took them home and placed them on a shelf in my cellar-way where it was rather dark, with the temperature around 68°F. I watered the queens periodically. This seems necessary since the average queen candy contains approximately seven percent moisture, so I am told. I have found from past experience that queens and attendants in the cages require a considerable amount of moisture, especially if the weather is hot and dry. During hot weather I have held each queen cage under a water faucet, tipping the cage so that the water will run onto the candy in the end of the cage, in order to soften the candy. I have filled the queen cage with water during hot weather, then have shaken the water out. This seems to do the bees no harm. However, if the queen cages are in a rather cool place, a comparatively small amount of water should be used.

Introducing Queens

I have heard of some beekeepers who think they have a method of queen introduction that is 100 percent successful. I wish that I could say as much. A few years ago I secured a valuable queen that I introduced to one of my colonies, using the best method I knew of to get the queen introduced but the queen was lost.

I am wondering if certain weather conditions, that is, the condition of the atmosphere, have something to do with successful queen introduction. Of course, we know, or think we know, that queens are more likely to be accepted during a honey flow than they are during a dearth of nectar.

Some years ago when I operated around a thousand hives of bees in 20 apiaries for the The A. I. Root Company we made a practice of requeening all of our colonies during early August. On certain days we were practically 100 percent successful and one or two days later we would have a considerable percentage of loss. Commercial beekeepers have probably had similar experiences.

Some seem to think that the attendant bees in the mailing and introducing cages should be released before the queens are introduced. That sounds sensible, assuming that the attendant bees in the cages cause some antagonism among the bees in the colonies. I haven't found a good way of getting rid of or releasing attendant bees from cages. I have tried prying up one corner of the screen on each cage to let the attendant bees out. This has been done in the cab of my car, with all the

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NEWS and EVENTS

MICHIGAN to Host EIGHTH AMERICAN NATIONAL HONEY SHOW

Detroit, Michigan
September 2-11, 1960

The American Beekeeping Federation, The Michigan Beekeepers' Association and the Michigan State Fair invite your participation in the eighth annual American National Honey Show which will be held in conjunction with the Michigan State Fair in Detroit, Michigan, September 2-11, 1960.

Judging the show this year will be Mr. S. E. Bailey, Columbus, Ohio, State Apiary Inspector. Rules and regulations will be printed in full in the American Beekeeping Federation Newsletter, or may be had by writing to Mr. Walter E. Becker, Superintendent, 10326 Wyoming, Detroit 4, Michigan, or Mrs. Margaret F. Seidelman, Sec., Michigan Beekeepers' Association, Route 3, Ionia, Mich.

There will be 11 classes this year as follows:

Class A - Light colored honey, clover source, 6 1-lb. jars
Class B - Light colored honey, any other variety, 6 1-lb. jars
Class C - Golden colored honey, 6 1-lb. jars
Class D - Amber colored honey, 6 1-lb. jars
Class E - Dark colored honey, 6 1-lb. jars
Class F - Comb honey, 4¼x4¼", or 4x5" only, 6 sections
Class G - Cut comb honey, approximately 4x4", 6 pieces
Class H - Chunk honey, 6 2½-lb. jars
Class I - Creamed Granulated Honey, 6 1-lb. jars
Class J - Beeswax 5 lbs. (approximately) in 1 piece
Class K - Honey Use exhibit (25% of sweetening used to be HONEY)
Lot 1 Cake
Lot 2 Cookies, 12 pieces
Lot 3 Candy and confections, 12 pieces

There will be a silver trophy given to the first place winner in each class and a sweepstakes trophy for the exhibit scoring highest in the show. Besides the trophies, cash prizes will go to each class, six places $15 - $12 - $10 - $8 - $6 - $4. In class K this amount is divided between the three lots making first prize money in each lot $5.

Changes in these rules from previous years are: six one-pound bottles required in each class instead of 12 as in the past; beeswax in one piece.

Because it is impractical and uneconomical to return the honey from the National Show, the honey is to be turned over to the State sponsoring the

Kay Seidelman, Michigan Honey Queen, also the 1959 American Honey Queen.

show to be disposed of in the most advantageous way for promotion of Honey. If any exhibitor wishes to personally pick up his honey he shall notify the superintendent of the show and may do so when the honey is released.

The National Honey Show Committee appointed at the Federation meeting at Phoenix, Clare Floyd, Millard Coggshall and Margaret Seidelman, have approved the rule changes, and urge the beekeepers throughout the United States to use this very inexpensive way of promoting honey, AND WHO KNOWS, you might win $15 and a silver trophy for yourself too!

So, you don't pack any honey at home? Bottles are available, and it wouldn't be very hard to prepare six pound bottles of YOUR VERY CHOICE honey, would it? Aren't you filled with a great pride when you extract choice honey and don't you just wish that you could show it to someone? Here is your chance to show it to 100,000 people a day for ten days.

Have you ever stood and looked at a solid wall of honey covering 100 feet of wall space ten feet deep? It is a sight few people will ever forget because it is something of beauty and creates much interest on the part of people who might not otherwise be thinking about honey. At a National Honey Show the many states represented are denoted in some eye-catching manner and people look for the states that are represented. Are you going to let them find YOUR honey from YOUR state? Come on beekeepers, let's lift ourselves by our own bootstraps, we can move a lot of honey, IF we take advantage of the many chances we have to promote our own product. If you are in need of some advice on preparing a Fair exhibit, American Honey Institute has a bulletin on Fair Displays that is free for the asking.

MISSOURI
Midwestern Beekeepers' Association
June 12, 1960

The Midwestern Beekeepers' Association will hold its regular monthly meeting at The Apple House, Unity Farm, Sunday, June 12, 1960, at 2:30 P.M. Take Highway 50 to Unity Tower and turn east on Colburn Road to The Apple House. The meeting at Unity Farm has always been of great interest and benefit to all. Mr. Clyde Corn will be host and arrange the program. Please attend.—James A. Worrel, Secretary.

CONNECTICUT
Middlesex Beekeepers' Association
Haddam, Conn.
June 5, 1960

The summer meeting of the Middlesex Beekeepers' Association will be held Sunday afternoon, June 5th, 2:30 P.M. at the Agricultural Center, Haddam, Connecticut. A pot-luck supper will be shared. While started as a county organization, this Association is rapidly expanding to include beekeepers from neighboring counties, and anyone interested in beekeeping is welcome. For information, contact C. A. Rowland, Secretary, Round Hill Road, Middletown, Connecticut.

NEW HAMPSHIRE
Beekeepers' Association
Durham, N. H.
June 18, 1960

The New Hampshire Beekeepers' Association will hold its next meeting on June 18, at 1:30 in Putnam Hall, Room 4 at the University, Durham, N. H. Dr. Roger Morse from Cornell University, will speak on "Social Hormones and their Relation to Swarming in the Honeybee Colony". Then Dr. William R. Lee will conduct a tour of the bee yard which consists of 400 nuclei and 50 colonies.

The Essex County Beekeepers' Association will join with us for this meeting.—Barbara Prior, Sec.-Treas.

MASSACHUSETTS
Middlesex Co. Beekeepers' Assn.
Groton, Mass.
June 25, 1960

The second outdoor meeting of this season will be held at the home of Mr. and Mrs. Sam Dickson, Old Ayer Rd., Groton, Mass., at 2:00 p.m. Inspection of Mr. Dickson's Apiary will prove most interesting to all beekeepers as he is one of the successful comb honey producers in the eastern part of the state. The club hive will be inspected.

Officers of the Middlesex County Beekeepers' Association elected at the April meeting are: President, John H. Furber; Vice President, Alfred Olson;

Recording Secretary, Walter Carlson; Corresponding Secretary, Mrs. Walter Carlson; Treasurer, Samuel W. Dickson; Delegates, Chester W. McInnis, and Henry G. Neunzer.

It is the custom at the summer meetings to bring a picnic supper. Mr. Dickson will provide a charcoal grill for cooking. The club furnishes hot coffee and ice cream for members and visitors.—Betty Carlson, Corres. Sec.

KANSAS
Northeastern Beekeepers' Association
Muncie, Kansas
June 5, 1960

The Northeastern Kansas Beekeepers' Association will meet 2:30 P.M., Sunday, June 5th at the rural home of Mr. and Mrs. Don Barrett, 7920 Dixie, Muncie, Kansas. A dinner (at 1:00 P.M.) will precede the business meeting. Mr. W. C. Wright, commercial beekeeper of Edgerton, Mo. is expected as our guest speaker. Those interested in bees are welcome to attend this dinner and meeting.—R. F. Ferguson, Editor, Bee Buzzer.

MINNESOTA
Registration Law Challenged

Criminal charges against Gilbert Smith of Wadena, Minn. were dismissed on April 28th in St. Paul's Municipal Court by Judge Leonard Keyes. Smith was charged with failure to register his bees with the Commissioner of Agriculture in accordance with the Minnesota Bee Law. Smith challenged the constitutionality of the registration fee claiming that the fee was actually a tax. Dismissal of the charges was ordered by Judge Keyes because of the failure of the State to respond to the arguments filed with the Court in behalf of the defendent by Keith D. Kennedy, Smith's attorney.

Last year an attempt was made by the state legislature to increase this registration fee. A poll of the beekeepers indicated that the beekeepers were almost unanimously against any increase. The count was 192 against it and only one for it.

Last year the state appropriated about $35,000.00 for bee inspection work. The registration fee brought in about $2,800.00. Some state legislators feel that the beekeepers should carry a larger part of the cost of bee inspection by paying a larger registration fee. The outcome of the Smith case may have an important bearing on future legislation in Minnesota.—Melford Olson.

OHIO
Columbiana Beekeepers' Association
Salem, Ohio
July 30 and 31, 1960

The Columbiana Beekeepers' Association will be hosts for the Ohio State Summer Meeting, July 30 and 31st. It will be held in the CIO Hall, Salem, Ohio. We believe we will have a worthwhile, interesting and productive meeting. The noon meal Saturday will be available for $1.00 and the banquet at 6:30 p.m. for $2.00. Please write Mrs. Earl Hamilton, Rt. 1, Lisbon, Ohio and let her know you are coming. —Mrs. Russel Lamoncha.

NEW JERSEY
Eastern Apicultural Society Meeting
New Brunswick, N. J.
June 23-26, 1960

Advance registration for the 1960 EAS meeting is now well under way and those wishing to attend the meeting should forward a check for $3.00 to Prof. Robert S. Filmer, Entomology Department, College of Agriculture, Rutgers University, New Brunswick, New Jersey.

The meeting this year will be held on the Jameson Campus in New Brunswick and the meeting hall, dining hall and dormitories are all within a few hundred feet of each other.

Those registering early on Thursday, June 23 will be able to take tours of the campus, ornamental gardens, and see other activities in the vicinity.

Other features of the program will be the book booth, gadget show, and honey show and cookery contest. Because the meeting is being held early this year it is permissible to enter last year's honey.

OHIO
Lorain County Beekeepers' Assn.
Wellington, Ohio

The Lorain County Beekeepers' Association held its annual Spring Festival on April 21st, in Wellington, Ohio.

Larry Breckenridge was Master of Ceremonies for the evening's varied activities.

(Continued on page 375)

Buy and Sell

Classified rates: 18¢ per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) count as one word. Copy should be in by the 10th of the month, preceding publication.

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WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. HUBBARD APIARIES, ONSTED, MICHIGAN.

IOWA honey, one can or truck loads. RUSSELL D. SMALLEY, BEAVER, IOWA.

CLOVER extracted honey in sixties. ABRAM BRUBAKER, 1525 September Dr., LANCASTER, PA.

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WHITE AND AMBER honey in sixties. MRS. WM. R. STEPHENS, WINGATE, IND.

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BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—All grades of extracted honey. Send sample and price. DEER CREEK HONEY FARMS, LONDON, OHIO.

CASH FOR BEESWAX. Write as to quantity and we will quote price. MUENCH-KREUZER CANDLE CO., INC., SYRACUSE, N. Y.

WANTED—White extracted or comb honey. Send sample. MILLERSPORT HONEY CO., MILLERSPORT, OHIO.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. THE A. I. ROOT COMPANY, MEDINA, OHIO; COUNCIL BLUFFS, IOWA; SAN ANTONIO, TEXAS.

WRITE FOR SHIPPING TAGS and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. WALTER T. KELLEY CO., CLARKSON, KY.

WANTED — Light amber clover, fall flowers, buckwheat and white clover. Send samole and lowest price. CLOVERDALE HONEY CO., FREDONIA, N. Y.

WANTED—Buckwheat and light amber honey. EASTERN FOOD PRODUCTS, 421 BEDFORD AVE., BROOKLYN, N. Y.

HONEY WANTED for bottling, all types in drums, tins, trailer and car lots. Send samples each lot. Write: CHAS E. FARRIS CO., 99 Hudson Street, NEW YORK CITY. Est. since 1910.

WANTED—Honey in 60 pound cans, also beeswax any quantity. L. E. ALLEN, TIPTON, MICH.

ALL GRADES extracted honey wanted in both 60 pound cans and 600 pound drums. PRAIRIE VIEW HONEY CO., 12303 12th St., DETROIT 6, MICHIGAN.

WANTED, chunk comb and extracted honey. Mail sample and price. STOLLER HONEY FARMS, LATTY, OHIO.

We render cappings, old combs and buy your beeswax. Shipping tags sent on request.—M. R. CARY CORP., GPO Box 818, SYRACUSE 1, N. Y.

WANTED: Honey—water-white, light amber and buckwheat extracted and comb. Send samples and prices. M. R. CARY CORP., GPO Box 818, SYRACUSE 1, NEW YORK.

WANTED—Chunk and extracted honey. Send sample and price. RONALD CULP, CIRCLEVILLE, OHIO.

WANTED—White honey in cans or drums. HONEY BOY, Belt Hiway, ST. JOSEPH, MO.

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NEW CYPRESS BEE WARE—9⅝ supers, $1.05; 6⅝ supers, 70¢; 5¾ supers, bottoms, or covers, 60¢; telescope cover (without metal), 75¢. C. L. STONECYPHER, HOMERVILLE, GA.

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SEARS ROEBUCK SAW, 28 x 28 inches including extension, motor with five pulleys, $35.00; also 40 x 48 inch saw, no motor, five pulleys, weight 150 to 200 pounds, $25.00; one Root extractor and 2 Farm Masters, $10.00 each. EDWARD ZAJICEK, 410 LaBelle St., BOSCOBEL, WIS.

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AT MY AGE, must sell my empty hives, extractor, honey tank. All clean frames. J. G. REICHERT, 3227 Harvey Ave., BERWYN, ILL.

BEE LINE HONEY JARS—Write for prices, H. G. RODERICK, 3850 E. Cerro Gordo, DECATUR, ILL.

1,000 HIVE OUTFIT, less bees, including 3 large extractors, Bogenschutz uncapper, tanks, boiler and miscellaneous items. ARCHIE KAUFFMAN, 5211 Perry Rd., GRAND BLANC, MICH.

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We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

CARNIOLAN and CAUCASIAN Bees for 1960. Booking queens. Each, $1.00; 2-pound bees with queen, $4.00. 3-pound bees with queen, $5.00. LEWIS & TILLERY BEE CO., RT. 3, BOX 251, DU 2-8371, GREENVILLE, ALABAMA.

PACKAGE BEES, QUEENS—Best Quality and Service. Write for prices. HUBBARD APIARIES, ONSTED, MICHIGAN.

CAUCASIAN QUEENS, $1.25 each. Extra good producers and gentle to handle. C. D. WARDELL & CO., Box 6226, PALESTINE, TEXAS.

ITALIAN and CARNIOLAN BEES. 3 pounds, $5.00, 5 pounds $6.90. Queens, $1.00. LUTHER PICKETT, EFLAND, N. C.

PRODUCTIVE ITALIAN QUEENS—Ready June 25. $1.00 each. SHIRL BAKER, MECOSTA, MICH.

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75¢

Shipped by Air Mail

Mr. Beekeeper you will be pleased with my BRIGHT 3-BAND selected honey-gathering strain. They will build up and prove to your satisfaction and help to increase your honey profits. When you introduce MY QUEENS you can feel assured that you have a queen who will do her duty, backed by years of improving and selecting from the finest mothers mated to selected drones. My aim is, If better bees and queens are to be raised, I will raise them. Every queen purely mated, safe arrival and satisfaction with state health certificate furnished.

	1-25	26-up
2-lb. pkgs. w/q	$3.10	$3.00
3-lb. pkgs. w/q	4.00	3.90
4-lb. pkgs. w/q	5.00	4.75
Untested queens	.75	.70
Tested queens	1.50	1.40

Packages shipped F.O.B. Express or Parcel Post, Postage Collect.

JOHN A. NORMAN

ROUTE ONE GRADY, ALA.

Hollopeter's Italian Queens

Result of 50 years breeding Northern stock in the North, and are Hardy, Healthy, Hustlers. June to November.

No packages. Queens only.

1-10, $1.25 11-25, $1.15 26-50, $1.00 51 and up, 90¢ each.

WHITE PINE BEE FARMS

ROCKTON, PA.

STARLINE BEES AND QUEENS. Also Reg. stock. Queens, 1 to 25, $1.30; 25 to 100, $1.15; 100 up, $1.00. Write for prices on package bees. ALAMANCE BEE COMPANY, GRAHAM, N. C. Phone: FR 6-3152.

ROYAL JELLY

ROYAL JELLY—$12.00 per ounce, postpaid. Write for prices in large lots. THE STOVER APIARIES, MAYHEW, MISS.

SUPER STRENGTH 100 mg. Royal Jelly capsules in bottles of 100 for $10.00. PRAIRIE VIEW HONEY CO., 12303 Twelfth St., DETROIT 6, MICH.

12 pounds ROYAL JELLY at $10.00 per ounce. GARON BEE COMPANY, DONALDSONVILLE, LA.

MISCELLANEOUS

BEES REMOVED from house or tree or hive without touching either house or bees. Bees will then move honey into hive. Save property, honey, and bees with my method. Send $2.00 for details. Satisfaction guaranteed. GEORGE HAWKINS, RT. 1, LAWSON, MO.

APPLY BEESTROY in your locality. Charge for services. Block infiltration of wild bees and EFB into your own stock. Dealer price, $18.00 per dozen from VALLEY APIARIES, Rt. 2, Box 23, PROPHETSTOWN, ILLINOIS.

NEED SUPERS with comb. Write REED BITTERS, Box 120, LOGAN, UTAH.

KEEP THAT BEEYARD CLEAN with our Weeder Goslings, 85¢ each, in 100 lots. PILGRIM GOOSE FARM, WILLIAMSFIELD, OHIO.

WANTED

WOULD LIKE TO BUY bees with 10-frame dovetailed standard equipment in Ohio. ADOLPH R. MOESCH, BONDUEL, WISCONSIN.

WILL TRADE new bee equipment for 8-frame Superior extractor and a 45-frame Root extractor in good condition. KEHM BROTHERS APIARIES, Route 1, Box 346, GRAND ISLAND, NEBRASKA.

SEEDS

HONEY PLANTS our specialty. Catalog on request. PELLETT GARDENS, ATLANTIC, IOWA.

HELP WANTED

ATTRACTIVE OPENING for shipping clerk—bee supply salesman, in New York City. Box 30, Gleanings in Bee Culture.

YOUNG MAN interested in working in apiary on partnership basis. Room and board furnished. EDWARD ZAJICEK, 410 LaBelle St., BOSCOBEL, WISCONSIN.

J. E. WING & SONS
48 Years Continuous Service
Italian Package Bees
and Queens
Our Specialty
Knights Landing, Calif.

MAGAZINES

THE SCOTTISH BEEKEEPER (The official organ of the Scottish Beekeepers' Association.) Scottish in character, international in appeal. Annual subscription $2 post free. Sample copy from ROBERT N. H. SKILLING, F.S.C.T., 87 KING STREET, KILMARNOCK, AYSHIRE.

Archiv fur Bienkunde, International journal for Bee Culture and beekeeping edonomirs. Founded in the fall of 1918. Oldest economic bee journal in the world. Praised again and again for its decades of independent leadership through many endorsements and advice as a valuable source also for the practice. Classic. Yearly DM 5.50. Any aspiring beekeeping friend will receive a sample copy. BIENEN VERLAG, GIELBELBACHSTR, 19, LINDAU (B) GERMANY.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, Box 189, San Angelo, Texas, the only ranch magazine published serving the Angora Goat Industry. Subscription $3.00. Sample copy 25c.

BEE WORLD, the international journal of the Bee Research Association published monthly, contains the latest research reports on bees and beekeeping. With Apicultural Abstracts it costs $5.50 per annum, or $6.00 including membership of the Bee Research Association. Apicultural Abstracts only $4.50 per annum from the Hon. Subscription Secretary, Bee Research Association, 10 BARNETT WOOD LANE, ASHTEAD, SURREY, ENGLAND.

PROFIT AND HEALTH—Raise dairy goats. Learn how. Monthly magazine, $2 yearly; sample and information 25¢. DAIRY GOAT JOURNAL, COLUMBIA T3, MISSOURI.

INDIAN BEE JOURNAL, know interesting facts concerning the honeybees of India. The only Bee Journal of India published in English. Subscription Rs. 12/- or Sh. 17/6d (Sterling) or $2.75 per year (INTERNATIONAL M.O.). Sample copy 2s. or 25 cents. Can be had from: The Managinb Elitor, Indian Bee Journal, Naini Tal, U. P., India.

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Over 35 years a shipper.
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BLUE BONNET APIARIES also
HOME of AULT BEE FARMS
Weslaco, Texas

SUMMER PRICES
QUEENS, $1.25 each, Air Mail
10 or more, $1.10 each
You may buy queens cheaper but you may get cheaper queens.
J. F. McVAY Jackson, Ala.

LITTLE'S
ITALIAN QUEENS

1 to 24	$1.45
25 to 99	1.35
100 and Up	1.25

Until June 15
ROYAL JELLY
Bulk & Capsules Write for Prices
LITTLE'S APIARIES
Shelbyville, Tennessee

NEWS AND EVENTS

(Continued from page 371)

Adelbert Schuster showed a movie on the honeybee, which was very informative and interesting.

A talk was given by Allen Ulrich on "Your County Agent". He explained how the county agents work with 4-H Clubs in their beekeeping programs.

A resume of "Beekeeping in Texas" was presented by Jack Happ, Managing Editor of Gleanings. He discussed the climatic conditions and their effect on beekeeping.

Mrs. Ann Happ spoke on "Honey for Breakfast Week". She stressed the importance of the work carried on by Mrs. Harriett Grace, of the American Honey Institute, for the purpose of promoting honey.

The program concluded with a panel discussion on bee problems. E. Russell Foster, President of the Association, served as moderator, with Harry Vandenberg and Mead Petty assisting.

Delicious barbecued sandwiches, home-made cake and fresh hot coffee were served to the members by the ladies.

The Lorain County Beekeepers' Association was established in 1919.

CANADA

Alberta Beekeepers' Association
Alberta, Canada

Date - June 11, 1960.

Place - The apiary of Mr. C. Jack Read —who is the Master Bee Farmer of Alberta for 1959.

Time - All day.

Activities - Inspection of hives, display of new equipment, contests, pot-luck dinner, huge bonfire and roast in the evening.

Who May Attend - All beekeepers and their families who are able to get to Red Deer. Red Deer is midway between Calgary and Edmonton.

Mr. Alan Graham, President of the Alberta Association will greet the members and friends. Come and enjoy a great day with grand people.

The dates for the Annual Convention have been set for October 24 and 25, 1960, in Edmonton, Alberta. An invitation is extended to all beekeepers from near and far to attend.—Clydie A. Bird, Sec.-Treas.

OHIO

Ashland County Beekeepers' Assn.
Ashland, Ohio

The Ashland County Beekeepers' Association met at the home of our county bee inspector, Mr. Grant Long, 515 Pleasant St., Ashland, Ohio. New officers elected for the coming year are: Harrison Seiss, president; Don Harper, vice president; Clifford Latter, secretary-treasurer, and Frank Myers, assistant. All took part in a very interesting discussion. Announcement of the Ohio State meeting to be held in Salem, Ohio, on July 30-31st was made. Items of interest for the display at the Ashland County Fair this fall were discussed at length. Club notified all members to have their new licences before June 1st. It is the plan of the Bee Club to promote a 4-H project in beekeeping. The valuable work done by honeybees in pollination of fruit trees and clovers etc. is becoming more recognized by all.—Clifford Latter, Sec.

Leather Italian
QUEENS
1 to 25 ..... 75¢ each
25 up ..... 65¢ each
Place your order for your requeening needs.
O. K. Anderson & Son
Box 516 Coffee Springs, Ala.

QUEENS
75¢
—By Return Mail—
Are your colonies weak and run down? Requeen and put new life into them with NORMAN BROS. young vigorous dependable queens. Safe arrival, health certificate, and satisfaction.
— PRICES —
2-lb. pkg. with queen $3.00
3-lb. pkg. with queen 4.00
Tested queens 1.50
All queens postpaid. Packages F.O.B.
NORMAN BROS. APIARIES
Ramer, Ala.

When you think of
Bees & Queens

Think of:
Merrill Bee Co.
P. O. Box 115
State Line, Miss.

With normal weather all orders should go out on time as our bees are in good condition.

Our 100% satisfaction has been good for 48 years, let us prove it.

SUMMER PRICES

2-lb. pkgs. with queens .....$2.75 any number
3-lb. pkgs. with queens ..... 3.50 any number
For larger packages add 75¢ per lb.
Untested queens ..75¢ each 25 up ..65¢ each
Tested queens .....$1.50 any number

Terms $1.00 per package with orders balance before shipments.

Shoot for profit - - - - Shoot for the STAR
Order STARLINE queens this season and profit.

PACKAGE	BEES WITH QUEENS 2 lb.	3 lb.	4 lb.	QUEENS Starline	Italian
1-24	$4.50	$5.70	$6.70	$1.70	$1.40
25-99	4.25	5.45	6.45	1.60	1.30
100-Up	4.00	5.20	6.20	1.50	1.20

Packages with Starline queens, add 30¢ per package.
Clipping 5¢ each queen, marking 5¢ each queen.
Reg. U. S. Pat. Off.
Cold Temperature Has **NOT** Affected Our Productions
ALL QUEEN ORDERS SHIPPED POSTAGE PREPAID TO YOU.
GARON BEE COMPANY DONALDSONVILLE, LA.

CAUCASIAN QUEENS AND PACKAGES 1960 PRICES

Gentle, Industrious Caucasian bees and queens. Bred for greater honey production, gentleness, highly prolific, no excessive propolis, swarm control. Tested Queens, $2.50 each.

2 Lb. Pkg. Bees with young queen — $4.25 each
3 Lb. Pkg. Bees with young queen — 5.25 each
Extra Queens Any Amount — — — 1.25 each

A Certificate of Health and Live Delivery Guaranteed. We are prepared to fill all orders promptly. Come after your bees or have them shipped Express or Parcel Post. Send $1.00 per package deposit with order. Balance two weeks prior to shipping date. Queens clipped or marked 15¢ additional. For Parcel Post shipments add for 2 pounds, $1.30 and $1.50 for 3 pounds. Send us your order for 1 or 1,000. Try US.

CAUCASIAN APIARIES
P.O. Box 87 Buckatunna, Mississippi

VENTILATION—THE SECRET OF COMB HONEY

(Continued from page 348)

high moisture and find that it will lose some flavor if the water content is not lowered within a short time. If my observations are correct, when moisture content is high the yeast is also relatively high. The combination of yeast and high moisture soon destroy much of the fragrance so desired in honey. Honey ripened better during the past season than for several years. When we started marketing our crop the moisture varied from 16.1 to 16.3. The flavor we believe was the best in many years.

TALKS TO BEEKEEPERS

(Continued from page 368)

windows shut tightly. In some cases the queen would slip out of the cage and fly against the windshield of the car. I would have to catch her and put her back in the cage, after the attendant bees had run out. This means a considerable expenditure of time and labor.

Another way to release attendants would be to place a piece of queen excluding zinc over the open end of the cage when it is stood on end. The attendant or worker bees should leave the cage through the zinc and the queen would be retained.

Some beekeepers have certain types of introducing cages they use which involve transferring queens from mailing cages into introducing cages. This transferring should be done in a bee-tight room near a window, so that if the queen escapes in the room she will fly to the window and can be caught quite easily.

In my opinion one reason for failures in having queens accepted is that they are released from cages too soon. Don't punch a hole through candy in end of cage. Let the bees eat the candy out and in the meantime bees in the colony will have more time to become acquainted with the queen and for the queen to acquire the colony odor.

Keep Ahead of the Bees

By the time this reaches our readers the major honey flow in northern latitudes will be about to begin. It behooves beekeepers to give supers to populous colonies in time to avoid congestion in brood chambers which seems to be the main cause of swarming. It is very necessary to keep ahead of the bees in order to secure the maximum crop of honey.

CARNIOLAN and CAUCASIAN QUEENS

Head your increase and requeening with either of these queens and be assured of gentle bees and honey crop. Line bred for generations.

	1-49	50-100	100 up
Queens	$1.45	$1.35	$1.25

Foreign — $2.50 U.S. Dollars

No package bees this season.

W. D. REAMS

Box 453 La Belle, Fla.

PACKAGE BEES & QUEENS
And ROYAL JELLY
Write for Prices

JACKSON APIARIES

P. O. Box 265 Funston, Ga.

HARPER QUEENS

by air mail
after June 10th

85¢ each or $8.00 per 10
$75.00 for 100

CARLUS T. HARPER
NEW BROCKTON, ALA.

NORMAN'S

Italian Queens 75¢ Air Mail

Improved 3-Band Italian Bees and Queens from top honey producing hives. Prompt service, full weight, safe arrival guaranteed with health certificate furnished.

Untested queens	$ .75
Tested queens	1.50
2 lb. pkgs. with queen	3.00
3 lb. pkgs. with queen	4.00
4 lb. pkgs. with queen	5.00

Packages shipped F.O.B. Express or via Parcel Post Collect.

NORMAN BEE CO.
ROUTE 1 RAMER, ALABAMA

XUM

WILLIAMS ITALIAN QUEENS
LARGE LEATHER COLORED THREE-BANDED
QUALITY SUPREME
CERTIFICATE WITH EACH SHIPMENT
1-9 Air Mail ..... $1.25 each
10-99 Air Mail ..... 1.15 each
100 Up Air Mail ..... 1.05 each
Queens clipped, 10¢ each, additional
PACKAGE BEES

	1-9	10 & up
2-lb. w/q	$3.80	$3.60
3-lb. w/q	4.80	4.60

Packages F.O.B. Shipping Point
DR. WILLIAMS APIARIES
115 W. Sterling Ave. Baytown, Texas

PACKAGE BEES — QUEENS
CAUCASIANS—MIDNITES—ITALIANS
We do our best to serve you with the best.
QUEENS
1 to 24 ..... $1.50 each
25 to 99 ..... 1.40 each
100 up ..... 1.30 each
Add 25¢ each for Midnite queens.
PACKAGE BEES

	2-lbs. w/q	3-lbs. w/q
1 to 24	$4.40 each	$5.60
25 to 99	4.20 each	5.30
100 up	4.00 each	5.10

Add 25¢ per pkg. for Midnite Queens
No charge for clipping and marking.
Write for prices on truckloads with exchange of cages.
THE COFFEY APIARIES
Whitsett, Texas
Express and telegraph office:
Three Rivers, Tex. Tel.: Campbellton 7-2525

Italian Queens
$1.10
W. E. Plant
Rt. 2 Hattiesburg, Miss.

QUALITY BRED ITALIAN QUEENS
BREEDERS SELECTED FROM OUR NORTHERN APIARIES FOR HARDINESS AND HONEY PRODUCTION. AIR MAIL DELIVERY ON ALL QUEENS:
Jan. through May ... $1.25 each
June through Sept. .... .75 each
Write for prices on Package Bees Eby's Permanent Foundation and bee supplies. We are in the market for wax.
Walter D. Leverette Apiaries
R. L. LEVERETTE, MGR.
P.O. Box 364 Ft. Pierce, Florida

TURNING COMB HONEY SUPERS END FOR END

(Continued from page 341)

will drain off, especially from the bottom board. For best results in comb honey production the colony should be level and should not be tipped to the front. When manipulations are made it is easy to check the condition of the sections. Where those in the rear are better drawn and contain more honey than those in the front, the supers should be turned end for end.

NINETY-THREE AND STILL A BEEKEEPER

(Continued from page 355)

Charley was widely traveled in his youth, having tended bees in Florida in 1898, when traveling to Florida from this area meant going by boat from either Philadelphia, or New York.

In 1910 he tended bees in the Imperial Valley of California and though the crops were slightly short of sensational, Charley longed for New Jersey so he came back to Jersey. Until his retirement, he worked at various jobs from motorman on a trolley in Trenton, to carpenter, but always keeping to his bees and his trapping as profitable sidelines. "I'm glad I did", he explains, "It certainly helps now, and I enjoy the work and talking to the many people I sell honey to!"

Charley has never owned more than 99 colonies at a time, but with individual care of each colony and some migratory beekeeping that he used to do, his crops have been far above average.

When I asked him how long he had been keeping bees, he laughed and said: "As long as I can remember. My father had bees when I was born and very early I started 'messing' with them, and kept at it ever since. In fact, you might say I've had bees 93 years and enjoyed every minute of it."

Beeswax Rendering Service
Exchange Your Beeswax for Foundation
Write for Price List.
WAX WORKERS, INC.
1330 Slaterville Rd. Ithaca, N. Y.

STRAWBERRY TIME AGAIN

(Continued from page 357)

Cool slightly; cut into squares. Serve warm or cold with honey sweetened whipped cream. Garnish with honey coated choice berries. Yield: 9 servings.

Honey Strawberry Chiffon Pie

One cup strawberries, thoroughly crushed, ½ cup honey, 1 tablespoon unflavored gelatin, 3 egg whites, ¼ teaspoon cream of tartar, ¼ cup honey, and ½ cup whipping cream, whipped.

Blend strawberries, gelatin and honey in saucepan. Cook to full rolling boil, stirring constantly. Skim, if necessary. Place pan in cold water; cool until mixture mounds slightly when dropped from spoon. Beat egg whites with cream of tartar until foamy, beat in honey gradually, continue beating until stiff and glossy. Do not under beat. Then fold in whipped cream. Fold cooled fruit mixture into meringue. Pile in cooled baked 9" pie shell. Chill several hours until set. When ready to serve garnish with honey coated strawberries.

Queens

Our queen yards will operate all summer. Replace those failing old queens with either our Regular Italian or Island Hybrids.

Prices Postpaid

	Reg. Italians	Island Hybrids
1-24	$1.20 each	$1.50 each
25-99	1.10 "	1.40 "
100 up	1.00 "	1.30 "

All queens clipped unless ordered otherwise. Marking by request only 10¢ ea.

"They Produce"

Rossman Apiaries

P.O.Box 133 Moultrie, Ga.

BETTER BRED QUEENS **THREE BANDED ITALIANS**

Our Better Bred Stock is as good as any queen you can buy at any price. They are priced right.

85¢ any quantity.

CALVERT APIARIES **CALVERT, ALA.**

BEE SUPPLY CO.

1037 Commonwealth Avenue Boston 15, Mass.

Phone: Boston Liberty 2-4124

Supplying N.E. Beekeepers with A. I. Root products for over 50 years.

Boston Stock — Root Prices

CAUCASIAN OR ITALIAN BEES

The time to Re-Queen is now while you can get Queens cheap. In order to get Queens the date you prefer, I urge you to book your order early.

Lots of	Queens	2 lb. & Q.	3 lb. & Q.	4 lb. & Q.	5 lb. & Q.
1-24	$ .90	$3.35	$4.20	$5.05	$6.00
25-99	.75	3.20	4.00	4.85	5.80
100-up	.65	3.00	3.90	4.75	5.70

FARRIS HOMAN

Highway 45 West SHANNON, MISS. Phone: POrter 7-3960

QUEENS

ITALIANS CAUCASIANS

The package bee season is about over and we have lots of good queens ready for prompt shipment. Let us serve you.

In lots of	Price	In lots of	Price
1-24	$1.00 each	25-499	85¢ each

TESTED QUEENS .....$2.00 each

Airmailed—Clipped—No extra cost 10¢ each extra for marking

THE STOVER APIARIES Mayhew, Miss.

JENSEN'S QUEENS

JENSEN reared queens are GOOD, "No foolin". Queens available now are, we believe, the finest we've ever produced. They are unusually large, beautifully proportioned and we have every reason to believe will give you a good account of themselves in your colonies. High production, gentleness, hardiness and adaptability to varied climatic conditions are inherent qualities that do not just happen. It always pays to buy the best.

Reg. U. S. Pat. Off.

Dadant Starline Hybrids
1-25, $1.30 25-99, $1.20
100 up $1.00

Jensen's Magnolia State
1-25, $1.00 25-99, $ .90
100 up .....$ .80

Clipped and Marked for only 10¢ each additional.

JENSEN'S APIARIES MACON, MISS. Phone 170J

ITALIAN & CAUCASIAN BEES AND QUEENS 1960 PRICES

Bees that stand test for Honey Gatherers, Gentleness, and very prolific. Bred from select hives, Fumidil fed grafting and queen yards. A certificate of health and live delivery guaranteed. All queens Air Mail. Tested Queens, each, $2.50.

	2 Lb.	3 Lb.	4 Lb.	5 Lb.	Queens
1 - 24	$4.50	$5.50	$6.50	$7.50	$1.45
25 - 99	4.25	5.25	6.25	7.25	1.35
100 - up	4.00	5.00	6.00	7.00	1.25

We are prepared to fill all orders promptly. .Come after your bees or have them shipped Express or Parcel Post. Send $1.00 per package deposit, balance two weeks prior to shipping date. Parcel Post, add for 2 Lb. $1.30; 3 Lb. $1.50. Larger packages add $2.50.

SEND US YOUR ORDER FOR 1 or 1,000 — TRY US.

G. D. McCARY & SON BEE CO. BUCKATUNNA, MISSISSIPPI

THOSE GOOD DARK ITALIAN QUEENS

They are Large and Vigorous

1 to 49 .....$1.00 50 and up .....90¢

for clipping or marking add 5¢ each

WEAVER APIARIES, Navasota, Texas

RESEARCH REVIEW

(Continued from page 349)

that the plant was not too good a honey producer but it was attractive to honeybees under certain conditions.

In all probability crown vetch will not become a major honey plant but might very well become an important minor source of nectar and pollen and thus be a good build-up plant for use in the southeast.

How to hold a roadbank. Agricultural Research 8:14. 1960.

MONTHLY HONEY REPORT

(Continued from page 325)

showed it in the recent Fiesta Flambeau (night torchlight parade) held annually in San Antonio. The Fiesta parade, which drew in excess of 350,000 people from the Southwest, was shown on a regional television hook-up. The parade and the Fiesta activities have been growing in size each passing year and soon expect to rival the Mardi Gras of New Orleans. The float was so well received that it was pictured in state newspapers, and the TV cameras got it in a close-up shot. Some large commercial beekeepers, like H. E. Fain, are active in Llano and Burnet counties. I am sure that the money invested in this large float has done a lot to focus attention on bees and honey.

NORTHERN CALIFORNIA BEES and QUEENS

Spring queens until May 5.

	Italian	Starline
1-10	$1.50	$1.80
10-25	1.35	1.65
25 or more	1.20	1.50

After May 5

less than 25	$1.10	$1.40
25 or more	1.00	1.30

Place your order with us and be assured of top quality queens and prompt, courteous service.

GEO. E. SMITH & SON

Rt. 4, Box 59 Yuba City, Calif.
Phone SHerwood 2-3511

QUEENS

Italians Caucasians
Nice large queens ..... 75¢
For package bees, see May ad.

MITCHELL'S APIARIES
BUNKIE, LA.

California ITALIAN Queens
Extra Good Breeders
1 to 24 .....$1.00 each
25 or more ..... .90 each
PRICE AFTER JUNE 15
DAN W. ALVIES
670 ROE ROAD PARADISE, CALIFORNIA

PACKAGE BEES AND QUEENS

Walker-Lee Co. Live Oak, Calif.

"California Caucasians"

Gentle and industrious Caucasian queens. Hastings strain used for breeders. Bred for greater honey production. Gentleness, highly prolific. No excessive propolis. Swarm control and color. 10% books your order — balance two weeks prior to shipment. Air Mail. We do not clip or mark.

Summer and Fall Prices

1 to 24 ..... $1.30 25 to 99 ..... $1.15 100 & up $1.00

QUALITY AND SERVICE DOESN'T COST — IT PAYS

DON J. STRACHAN Yuba City, Calif.

Rt. 2, Box 83 Phone Sherwood 23881

TEXAS CAUCASIAN QUEENS AND PACKAGES

	1-24	25-99	100 up
2-lb. pkg. w/q	$4.50	$4.25	$4.00
3-lb. pkg. w/q	5.60	5.30	5.00
Queens	1.45	1.35	1.25

All queens personally produced by J. E. Hastings and his breeding stock. Bred for non-swarming, very gentle, good honey producers. Health certificate, weight, and live arrival guaranteed.

KANES APIARIES
Route 1, Box 200 Hallettsville, Texas

SMITH'S

SELECTED QUEENS

Please REMEMBER we can supply our good queens until November. I personally rear each queen and assure you they are GOOD.

1-9 ..... 90¢ each
10-24 ..... 85¢ each
25 or more ..... 80¢ each

N. B. SMITH & CO.
Calhoun, Alabama

QUEENS THAT SATISFY
From improved yellow banded Hybrid strain. Marked and clipped unless otherwise specified. Shipped Air Mail for quicker delivery.
1 to 24, $1.10 25 up, $1.00
No packages please.
S. C. SQUIRES
P.O. Box 566 Chapel Hill, N. C.

CANADA'S
National Monthly Magazine for Beekeepers
Canadian Bee Journal
Streetsville, Ontario, Canada

LIVE AND LEARN

(Continued from page 354)

time, say the end of June, they will most likely have got over any ideas they had of going out, and under the pressure of the honey flow, fill any brood cells in those supers with honey. This will automatically force the queen down into the present brood nest, and with luck, the supers will be full of honey.

This procedure, modified to fit individual cases as the season goes on will be how I manage my bees during the coming season. A catastrophe like last year's poisoning may make all this work unnecessary, or a dry spell at the wrong time could result in a poor crop. Anyhow, that's how I have done it for the past couple of years, and unless I find a better way with less work, I'll do it again.

LABOR SAVING SWARM CONTROL

(Continued from page 365)

hive keeps most of its pollen, the first chamber containing an average of six to eight combs of pollen. With plenty of space (two chambers) and plenty of pollen and honey coming in, the queen keeps laying full capacity and no preparation for swarming takes place.

When I was using the "Demaree Process", quite a few queens were failing to keep their performance for one or two weeks after the control, and that resulted in these colonies storing a smaller buckwheat crop later in August.

This process is very expeditious, as no frame needs to be handled individually; exchanging two body hives only, and no queen to find, using the acid board to chase her.

CAUCASIAN QUEENS **QUEENS** **MIDNITE HYBRID QUEENS**

Bred from the best stock available — 30 years' experience as a Caucasian shipper

	1-24	25-99	100 up
Caucasian Queens	$1.20	$1.10	$1.00

For "Midnite" Hybrid Queens add 25¢ to the above prices. Queens clipped and marked 10¢ extra. Live arrival guaranteed. Health certificate with each shipment.
HOWARD WEAVER & SONS Phone TAlbot 5-2836 Navasota, Texas

QUEENS.....“GULF BREEZE”.....ITALIANS
When in need of either a large number, or just a few queens, remember the reliable “GULF BREEZE” stock.
Prices: 1-9, 90¢ 10-49, 85¢ 50 or more, 80¢ each
Clip 5¢ and mark 5¢ extra.
BESSONET BEE COMPANY Donaldsonville, La.

THREE BAND ITALIAN “QUEENS”

Never before have good queens been so important.
Serving those who demand the best.

— Prices —

1-9	10-49	50 up
$1.00	**90¢**	**80¢**

Caged fresh from our yards and rushed to you prepaid Air Mail.
Clip and mark, 10¢ extra.
Quality Does Not Cost — It Pays
THE WILBANKS APIARIES CLAXTON, GEORGIA

HOMAN'S Quality Bred CAUCASIAN or ITALIAN Bees & Queens

	2-lb. w/q	3-lb. w/q	4-lb. w/q	5-lb. w/q	Queens
1-50	$3.00	$4.00	$5.00	$6.00	$ .75
50 up	2.85	3.75	4.75	5.75	.65

All queens postpaid airmail. Health certificate and live arrival guaranteed.
HOLDER HOMAN Ph: PO 7-3880 SHANNON, MISS.

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Starlines **Midnites** **Italians**

The Strains Preferred by Leading Honey Producers

Pkgs. with Starline or Midnite Qns.

Quantity	1-24	25-99	100 up
2 lb.	$4.80	$4.55	$4.30
3 lb.	6.00	5.75	5.50
4 lb.	7.20	6.95	6.70
5 lb.	8.40	8.15	7.90
Extra Queens—Starline or Midnite	$1.75	$1.65	$1.55

Queens Clipped 10¢. Clip and Mark 15¢ each additional. TERMS: Small orders cash, larger orders $1.00 deposit per package and balance two weeks prior to shipping date.

Pkgs. with Italian Queens

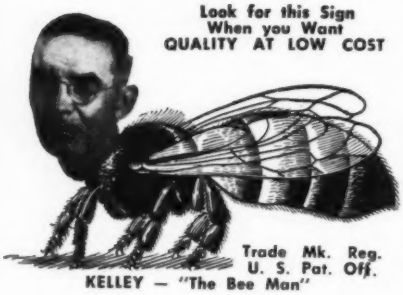
Quantity	1-24	25-99	100 up
2 lb.	$4.50	$4.25	$4.00
3 lb.	5.70	5.45	5.20
4 lb.	6.90	6.65	6.40
5 lb.	8.10	7.85	7.60
Extra Queens—Italian	$1.45	$1.35	$1.25

QUEENLESS packages — deduct $1.00 per package; TESTED QUEENS — add $1.00 per package or queen.

YORK BEE COMPANY

Jesup, Ga.
412 W. Orange St.
P. O. Box 300
Ph: Garden 7-4131
(The Universal Apiaries)

FREE! If you have not received your copy of latest shipping information on parcel post, express, truck, and air freight shipments, write today. A copy will be sent by return mail.



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KELLEY'S QUEENS by the thousand are available now. If you are in a rush count on us for quick shipment by return air mail.

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1 to 4 ..... $1.00 each
5 & up ..... .75 each

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Clarkson, Ky.

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